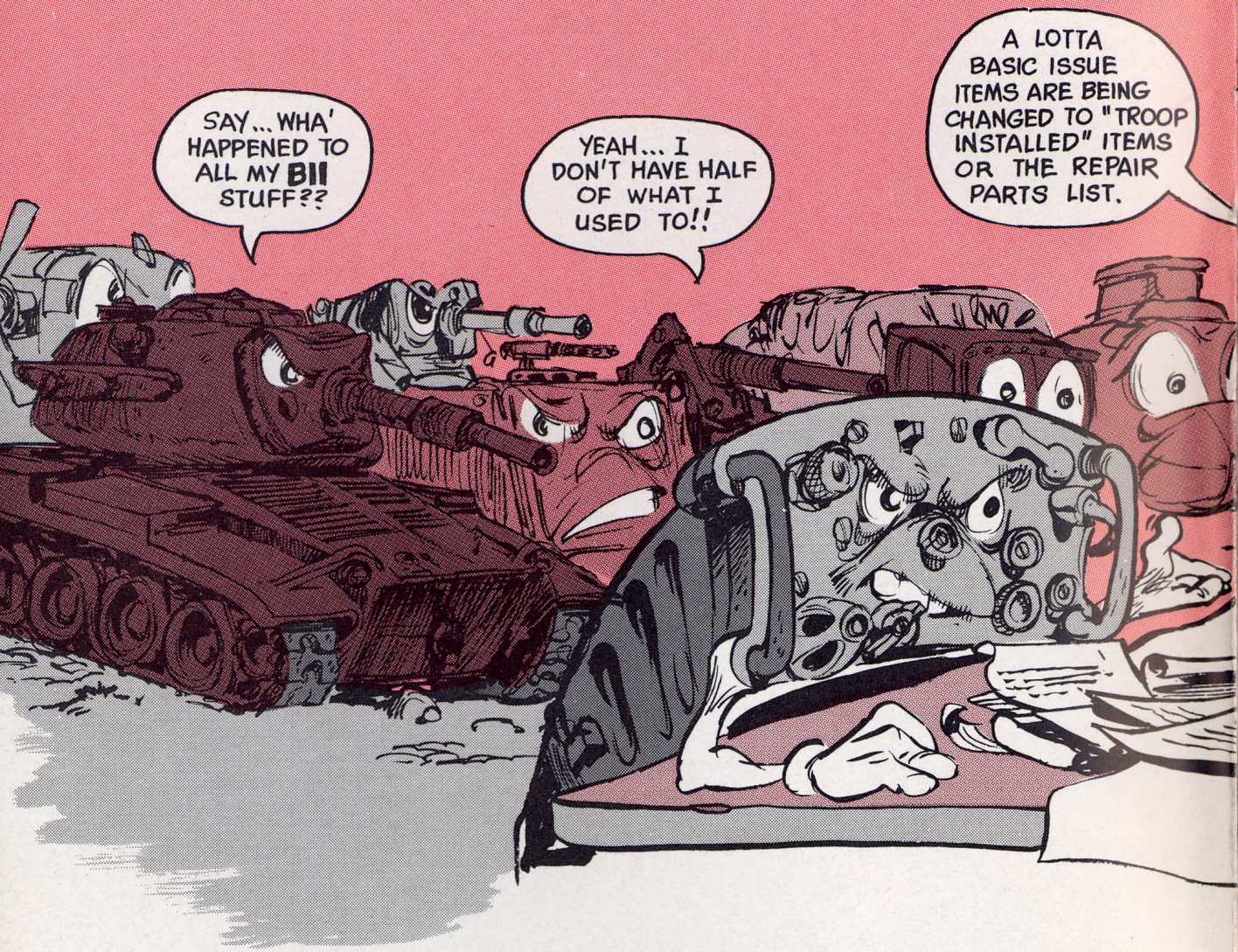
Issue 229
PS
1971 Series
December
THE PREVENTIVE MAINTENANCE MONTHLY
AW, SANTA...JUST BECAUSE MY NOSE IS RED...SHOULDN'T GET ME GROUNDED AS LEAD REINDEER.
S.C.I.AUS
KNOCK IT OFF, RUDOLPH... AND LOWER AWAY! E-A-S-Y...
CHUCK KNAPP
ESC TIPS PAGES 37-44

YOUR BIIL's AND THEIR BII

BASIC ISSUE ITEMS



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You'll be glad to hear that:

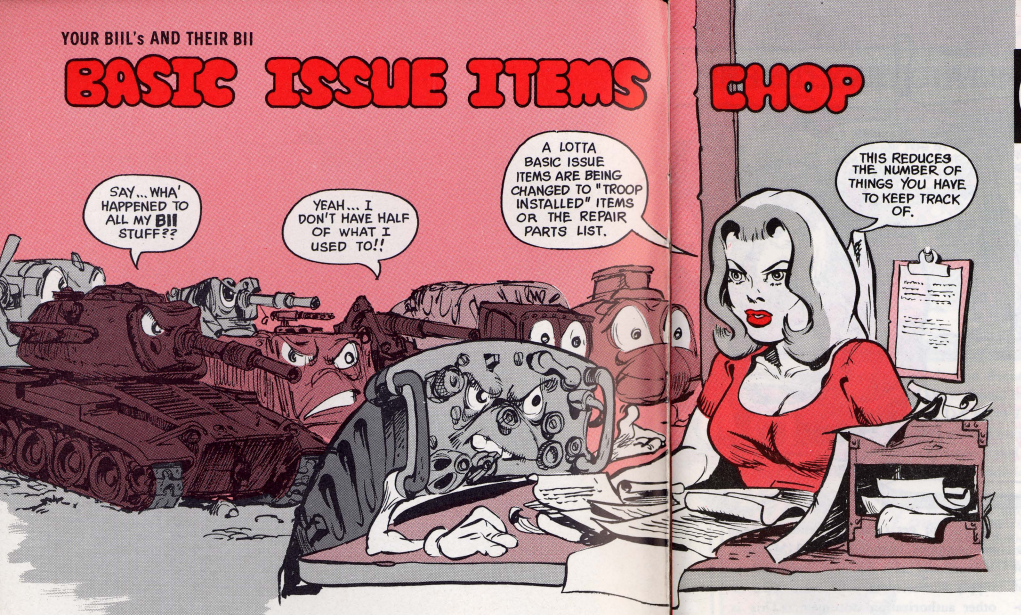
The common tools, common hardware, repair parts, and other maintenance-related, expendable supplies are no longer BII (basic issue items) as such. There's a new "troop installed" list being added to the operator's manuals (-10 TM). Also, the new rule is to use your -20P to get any repair parts the operator needs.

This means you no longer have to turn in those things when you turn a major end item over to your DSU.

All other BII—things needed for the major end items to do everything it's supposed to do—must be on board when the end item is evacuated for maintenance or turned in to the supply system. And, like always, if any basic issue item is short when the major end item is turned in, it must be covered by a report of survey.

YOUR BIII's AND THEIR BII

BASIC ISSUE ITEMS CHOP



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When you're issued new or replacement equipment in the future it'll come to you minus common tools, repair parts and other expendable supplies. So, hang on to those you didn't turn in.

Later on, those things—and other former BII—will be listed in the equipment's -20P manual, and you'll be authorized to request these as you need 'em.

PS

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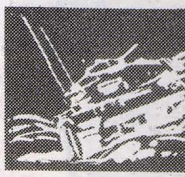

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Dear Half-Mast,

What authorization can we use to back up requests for repair parts and general supplies that we must have to keep our organizational equipment operationally ready?

SP4 C.O.B.

Dear Specialist C.O.B.,

There's no easy-does-it answer. Getting some items can be rough. A lot depends on the bare-bones definition of what's "necessary" to keep your equipment mission ready.

Repair parts, o'course, are authorized in parts manuals (normally -10P through -25P). But even these authorizations are subject to adjustment, based on demand and sometimes for other reasons.

You can get certain expendable general supplies from SB 700-50 (Mar 71).

Eventually this SB will be cited as supply authority in your basic TOE or other authorization document. (This is the SB referred to in para 2-5 of AR 310-34.)

This planned incorporation-by-reference in the TOE or other authorization document —as spelled out in para 1-3 of the SB— will take years to complete. Meanwhile,

COMBAT SUPPORT

FOR HARD-TO-GET ITEMS ... TRY THESE

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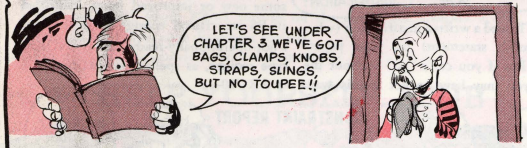

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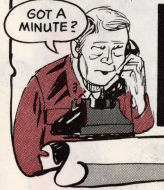

That means your CO must keep in close touch with your supply support unit and with the CO at the next level of command when necessary, to make sure that proper priorities are observed on maintenance-essential supply items. A 1-minute phone call may be all that's needed.

PS MORE

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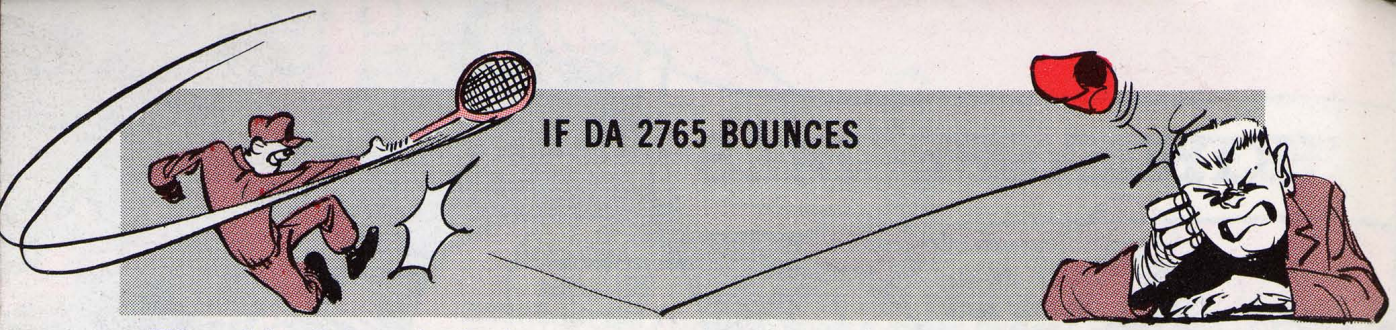
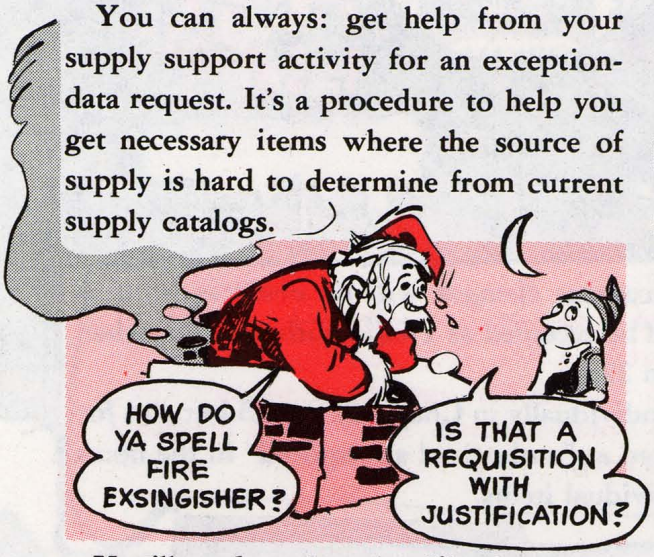


When "they" (somebody in your supply pipeline) bounce your DA Form 2765 because of some real or imagined "supply control" rule, what can you do?

You can always: get help from your supply support activity for an exception-data request. It's a procedure to help you get necessary items where the source of supply is hard to determine from current supply catalogs.



You'll need a written justification (why-you-need-it statement) on your paperwork. But if you can't "go" without the item, you may have to get it this way.

This requisition-with-justification may be the most effective way to get items you can readily identify in supply catalogs (Army or GSA) but which are not listed in your unit's authorization documents. (If you really need 'em, that is.)

Also, it may be the best way to get some items identified in PS. PS is official but not directive, so it's obviously not an authorization document—even though some new or improved items identified in PS are critical enough to qualify for a not-operationally-ready/supply (NORS) type request, as spelled out in Chapter 2 in AR 710-2.

When all else fails, ask your CO to file a constraint of supply report for items you can't get that are really necessary. See Chapter 2 in AR 710-2. Just write it as a DF or letter.

If there is a provable need, this constraint of supply report may shake loose those items in the supply pipeline—but don't use it for items just nice to have.

ON GRATIS NX

Dear Half-Mast,

Our supply support outfit shipped us some NX items that we didn't request. How do we pick them up on our property records?

SGT M.A.B.

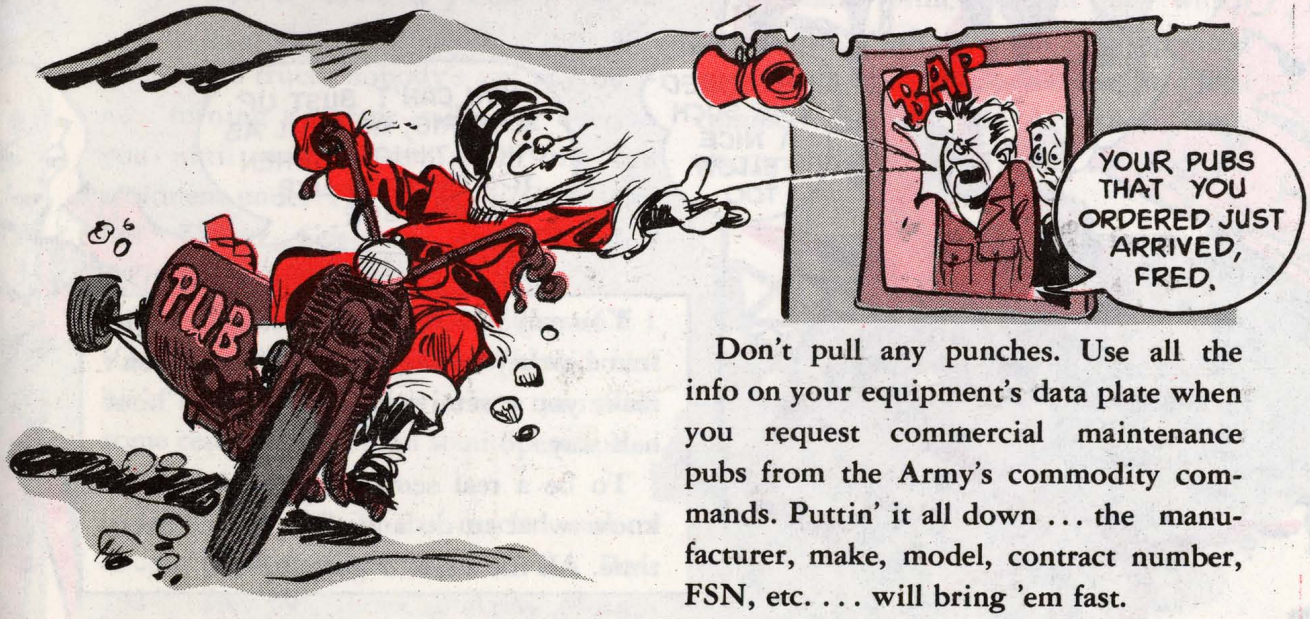
Dear Sergeant M.A.B.,

To cover yourself and to help supply account for the items, here's what you do:

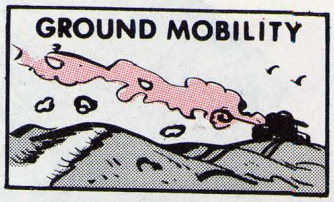
1. Use the number on the item's issue form to post the items to your document register.
2. Make up a DA Form 2765-1 turn-in on the items. See Chapter 2, AR 710-2.
3. Post the turn-in to your document register.
4. File a copy of the turn-in in your document file.

Half-Mast

HELP YOURSELF... BUB



Don't pull any punches. Use all the info on your equipment's data plate when you request commercial maintenance pubs from the Army's commodity commands. Puttin' it all down . . . the manufacturer, make, model, contract number, FSN, etc. . . . will bring 'em fast.



TRACTOR-TRAILER OPERATOR . . .

A SEMI PRO

HEY, YOU KIDS KEEP THE NOISE DOWN!

THAT WAS EITHER THE WORLD'S SECOND WORST DRIVER, OR MY WIFE HAS ENLISTED!

HOLD IT, IS THAT A NEW ROPE?

NO!

GOOD!

HE RAN OVER MY NEW COLOR TV!

IN MY LIVING ROOM

AT WHAT LOCATION?

LET'S SEE. DID HE HIT THE FENCE, THEN THE GARAGE, OR WAS IT...

I CAN'T UNDERSTAND IT, I'M ONE OF THE BEST THROTTLE JOCKEY IN MY OUTFIT.

YOU CAN'T BUST UP YOUR RIG, AS WELL AS OTHER THINGS... WHEN YOU OPERATE LIKE AN AMATEUR.

HE LOOKED LIKE SUCH A NICE FELLOW TOO.

BUT THEN HE STOPPED AND BACKED UP.

HE MISSED US THE FIRST TIME (SOB).

You may have been the hottest straight-frame jockey on the road, but that doesn't make you a semi pro. You're only 'bout half way.

To be a real semi pro, you've got to know what to do and then do it. Every time. All the time. Y'gotta care.

GROUND MOBILITY

TRACTOR-TRAILER OPERATOR ...

A SEMI PRO IS ALL PRO

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TM 21-305

TRAINING

Don't let anybody tell you that ramroddin' a semi is the same as handlin' a straight-job. It just ain't so. You and your equipment are in for some real suffering if the only semi training you get is running a tractor-trailer outfit down the road a coupla hundred yards 'n' back.

And if you've never qualified in any good-sized truck, nobody's got any business turning a tractor-trailer rig over to you until you've been given the full treatment under TM 21-300 w/Ch 1 (Oct 68), Driver Selection And Training (Wheeled vehicles).

This'll get you into TM 21-305 w/Ch 1 (Oct 66), Manual For The Wheeled Vehicle Driver. And this's where you find some real good poop on semi operation—in Chap 15.

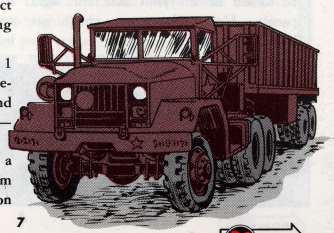
Then you fill in the cracks with a coupla training films listed in DA Pam 108-1 (May 69), Index of Army Motion Pictures And Related Audio-Visual Aids:

—TF 55-1478, Driving The Semitrailer

—TF 55-1918, Loads And Loading of General Transport Vehicles

All truck tractors are not the same. And there're a lot of different semitrailers. So you bury your nose in the operator's TM's for whatever tractor 'n' trailer you're handed. Bone up on their special features.

No matter which tractor and which trailer you've got, you can pick up some good stuff from this rundown on a real common rig—the M52A2 5-ton truck tractor and 12-ton M127A2C semitrailer.



PS MORE

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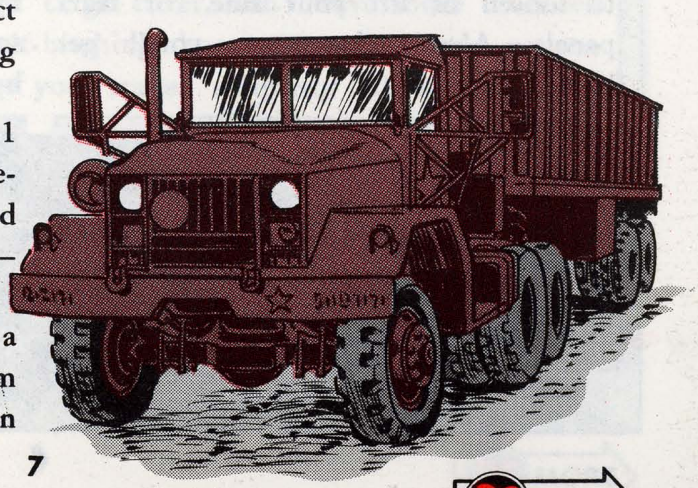
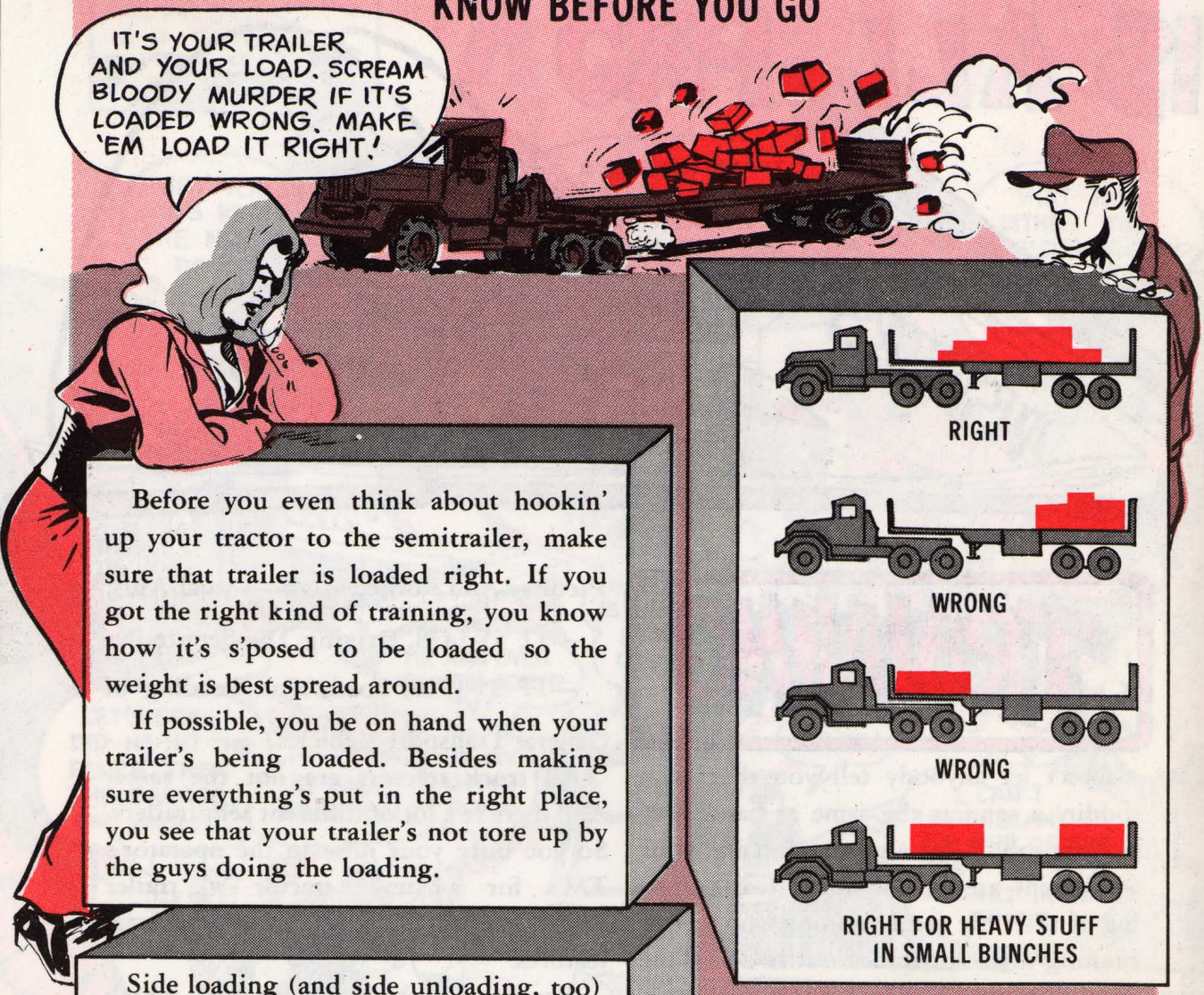


TM 21-305

PS MORE

KNOW BEFORE YOU GO

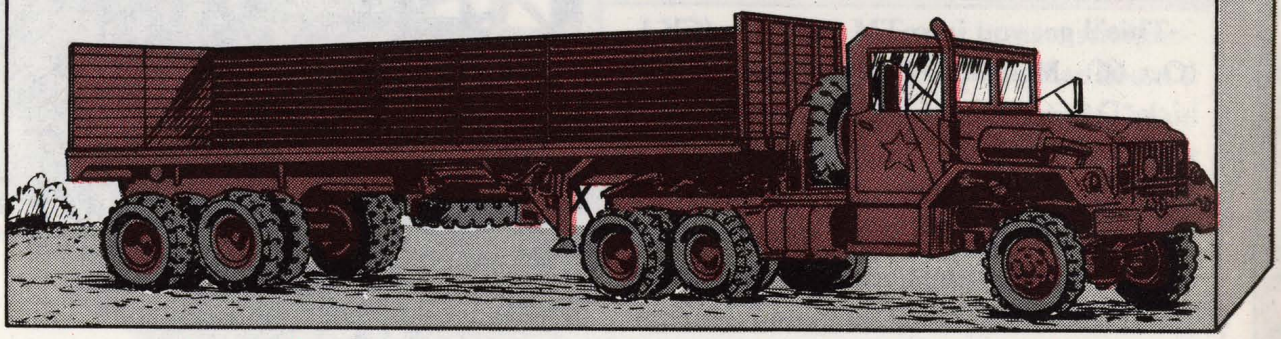


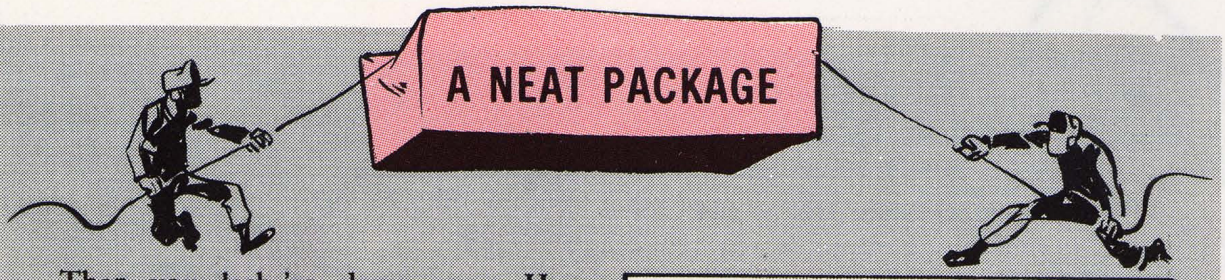
Before you even think about hookin' up your tractor to the semitrailer, make sure that trailer is loaded right. If you got the right kind of training, you know how it's s'posed to be loaded so the weight is best spread around.

If possible, you be on hand when your trailer's being loaded. Besides making sure everything's put in the right place, you see that your trailer's not tore up by the guys doing the loading.

Side loading (and side unloading, too) saves a lot of wear 'n' tear on your trailer when you've got the kind of cargo that can be handled this way. But beware of the "helpful" forklift operator who offers to loosen or lift your side (or rear) panels. Almost for sure, you'll get busted panels.

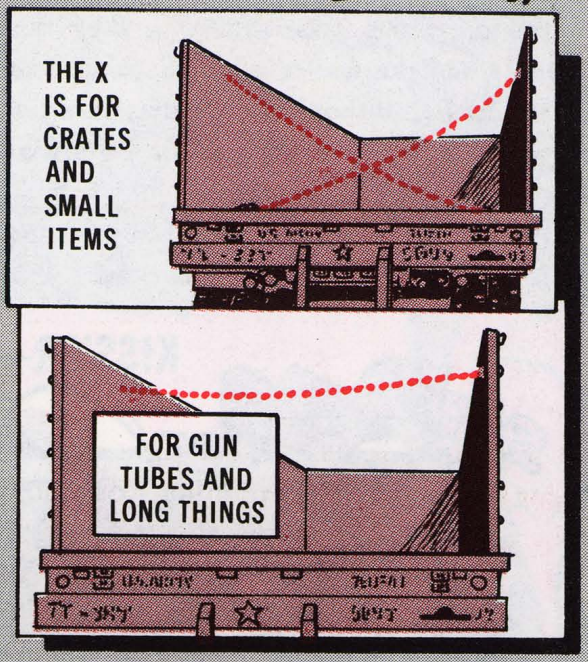
Loosen the panels with a bar, if they're stubborn, and lift 'em out of their pockets by hand. Then stack 'em out of the way someplace where they won't get run over by loading machines or other trucks.



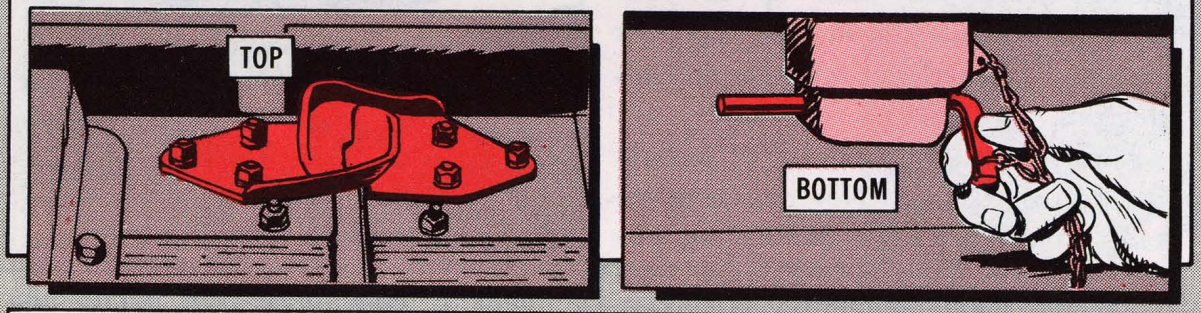


Then you lash 'er down snug. How you do it will depend on what cargo you're carrying—size, shape, how much—and what sort of ropes, chains and tie-downs your trailer has. The main thing is to keep your cargo from shifting around or falling off.

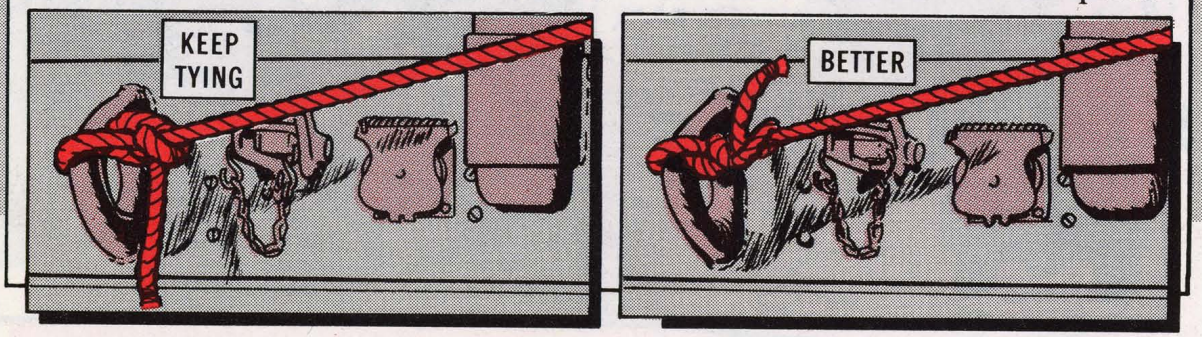
And you want to keep your side panels from spreading out. When you've got big crates 'n' such stuff, you can usually run your chains in an "X"—from the top of the panel down to the deck tie-down ring on the other side. If this won't work—like if you're carrying gun tubes—you run your chains straight across at the tops of the panels.



Check all the way around. Make sure all your panels are locked together at the top. And the bottom retaining pins are in place.



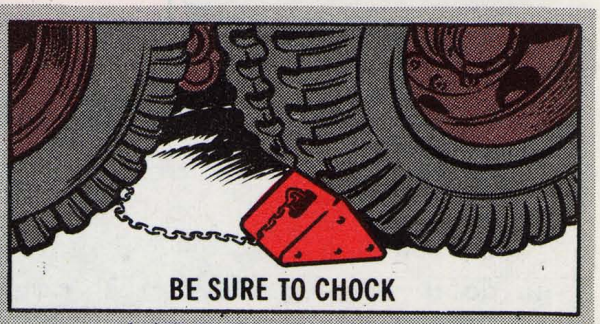
'Nother thing, when you're using a cargo cover, don't leave those tie-down ropes dangling down in front. Keep half-hitching those tails until they're up out of the way—or they'll get caught between your trailer 'n' tractor 5th wheel plates.



P.S MORE

Real important, before you're ready to hook up, are those chock blocks under your trailer wheels. One of 'em, anyway, should be **behind** the wheels so the trailer won't roll when you hitch up with your tractor. Sure, your trailer brakes were set when the trailer was last parked and the air line unhooked, but that lasts only for a li'l while—until the air bleeds off.

Ready now to mount up 'n' hitch up? Not yet—not until you've given your tractor a full before-operations-check. Your

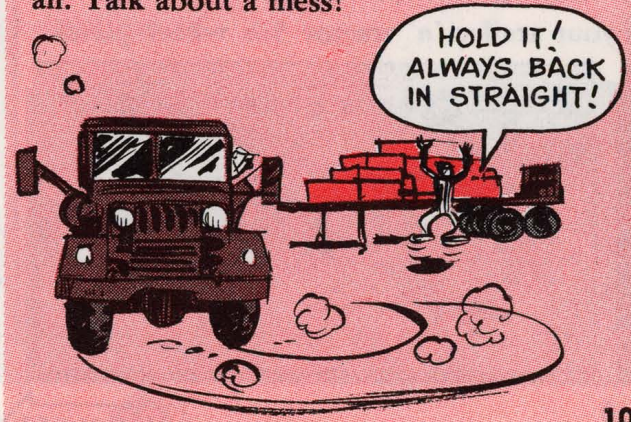


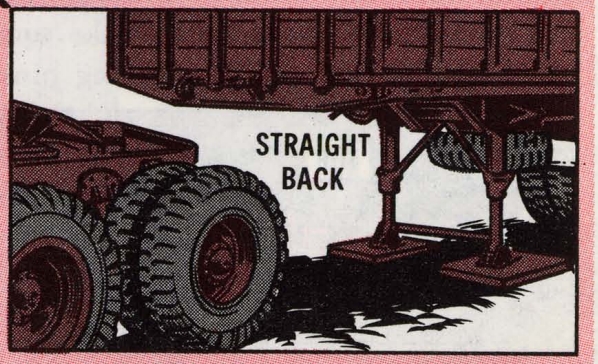
operator's TM gives you the rundown. (If your tractor's a multifuel job, like the M52A2, unlimber that copy of DA Pam 750-11, May 68, you're s'posed to keep close to your hot li'l hands.)

KISS'ER—BUT GENTLY

Get someone to lend a hand for a few seconds when you back up to your trailer. He'll guide you in lining up your tractor's 5th wheel slot with the trailer's king pin.

Always—**always**—back in a straight line with your trailer. Never come at the trailer from a side angle. More'n one guy has learned the hard way—a little too much speed—didn't stop quite quick enough—tipped over the trailer—cargo 'n' all. Talk about a mess!





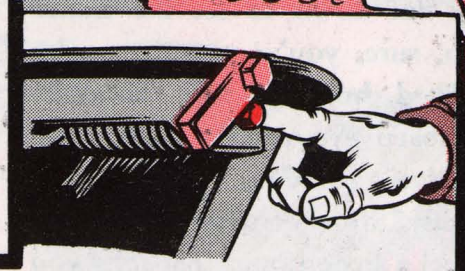
Slow 'n' easy—until your tractor just kisses the trailer. Then shift your tractor into NEUTRAL and put your parking

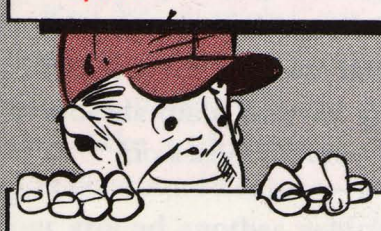
brake ON—and hop out.

SLIP WILL SHOW

Here's where you can help make or break yourself as a semi pro. If you make just one slip, it can nail you cold on the road.

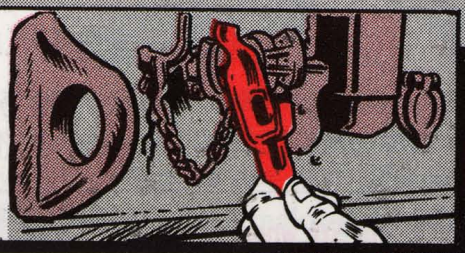
1. If your trailer's 5th wheel plate is too high or too low (more likely too low) to mate up with your tractor's 5th wheel, crank your trailer's landing gear up or down until it's right. With a heavy load, it's easier to use the lower cranking speed.





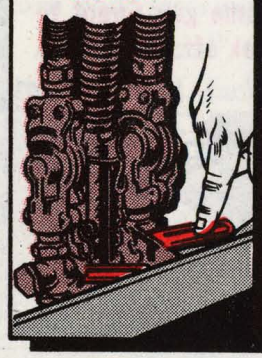
2. Make sure your tractor's 5th wheel jaws are open. You can tell if the lock-up pin is sticking out.

3. Take off the trailer's dummy air couplings. Be sure to hang 'em both up or you'll chop 'em off in the 5th wheel when you slide under the trailer.

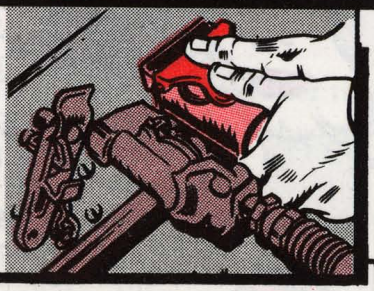


4. Connect your tractor's air lines to the trailer—SERVICE to SERVICE, EMERGENCY to EMERGENCY. (You've got tags there telling which is which, but your CO can authorize painting—under AR 385-55—to make it easier 'n' safer. Paint SERVICE yellow, EMERGENCY red.)

5. Open the air valves on your tractor.



6. Hook up the electrical cable from your tractor to the trailer. If the plug cover doesn't snap back 'n' stay back, get it fixed. Make sure the trailer receptacle cover latches into the groove on top of the plug so the plug won't fall out.



And, hey, that cover 'n' plug are no step—they're off limits to apple mashers!

PS MORE

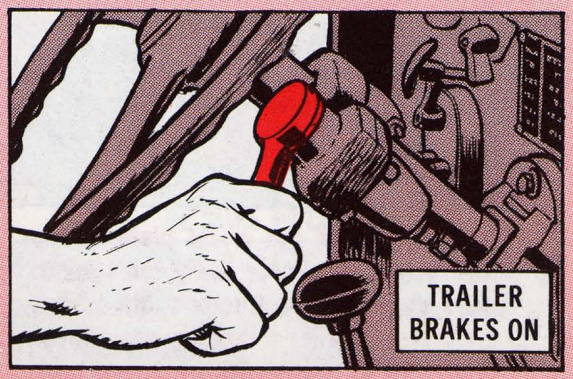
ONE PLUS ONE EQUALS . . . ONE

Now you're ready to couple up and make a complete truck out of that tractor 'n' trailer.

Hop into the cab—parking brake OFF—transmission in REVERSE—hold the Johnny bar down to set the trailer brakes. (Oh, sure, you've got the trailer wheels blocked, but why take chances?)

Keep a sharp eye peeled back there where the action is. Give 'er the gas—slow 'n' steady. Slide 'er under the trailer until you feel a little bump that tells you the trailer's king pin locked into the tractor's 5th wheel.

Shift into FIRST—Johnny bar still

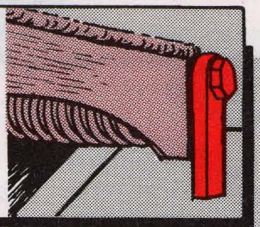


down to hold the trailer brakes—feed 'er just enough gas to put a pull on the trailer. F'rgoshsakes, don't go pourin' on the coal! If your trailer's not hooked up good, you only have to jump ahead a li'l too far to tear your air hoses off.

WRAP UP 'N' ROLL

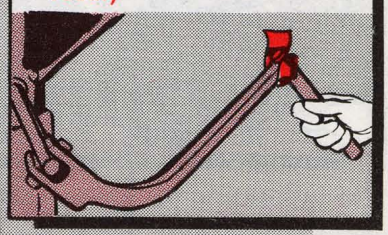
Before you climb down, make sure your gear shift's back in NEUTRAL, parking brake's ON, trailer brakes still ON (Johnny bar down). Then . . .

1. Doublecheck your 5th wheel hookup. The lock plunger should've pulled back into the 5th wheel. And the safety latch should've dropped down over the end of the plunger.

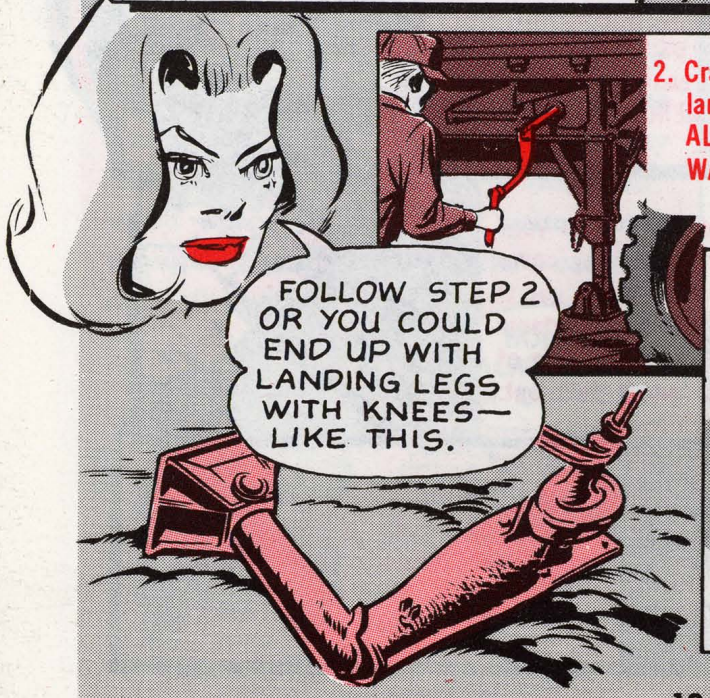


2. Crank up your landing gear—ALL THE WAY UP!

3. Stow the crank handle back in its holder.(Hanging down and swinging loose, that crank can mangle some guy walkin' alongside the road.)



4. Pick up your float pads and stow 'em. (If you ever see float pads layin' along the road, you know some guy forgot to stow 'em before he took off.)



5. Same goes for your chock blocks. And make sure the chains are wrapped up out of the way so they don't dangle and get fouled in your wheels. Or, worse, they can whip off a brake line.

Now you're ready to roll, man!

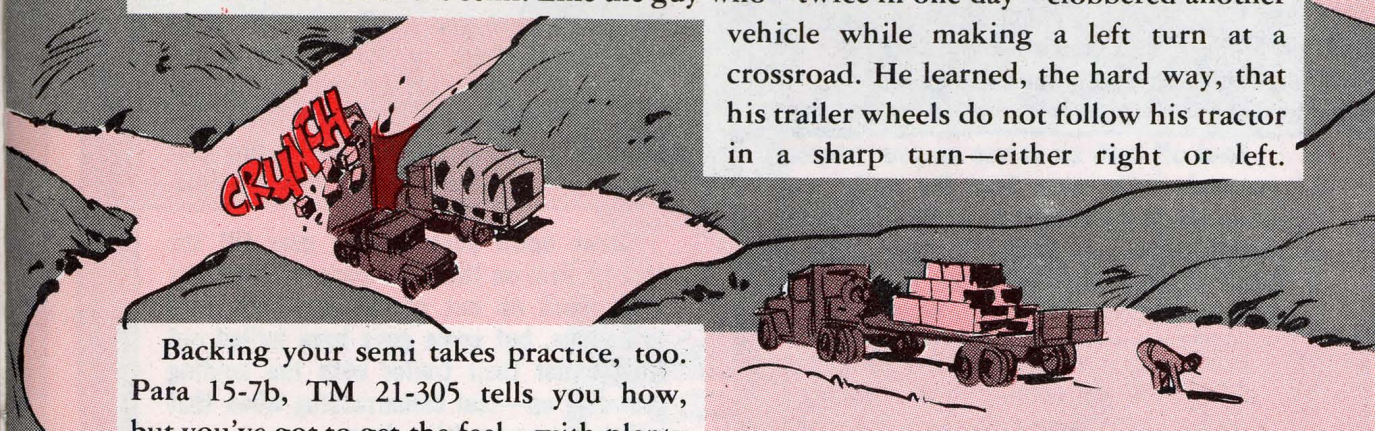
ON THE ROAD

Here's where that good training you got really pays off.

You know you've got to allow more room for turning, because the tail end of your trailer will cut across any turn you make with your tractor—like when you go around a corner—or when you pull out around another vehicle on the road.

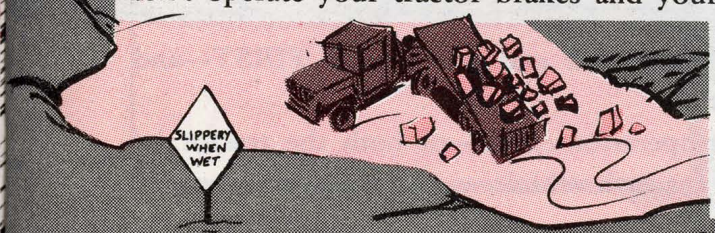
Most guys catch on pretty quick . . . they're mighty careful about that "blind" side.

But it's surprising how many drivers forget the same thing happens on their own side—the left side of the semi. Like the guy who—twice in one day—clobbered another vehicle while making a left turn at a crossroad. He learned, the hard way, that his trailer wheels do not follow his tractor in a sharp turn—either right or left.



Backing your semi takes practice, too. Para 15-7b, TM 21-305 tells you how, but you've got to get the feel—with plenty of practice—before you know how. Most guys find it's easier to back a semi-trailer than a smaller (lunette-type) trailer, because the semi doesn't "answer" so quick when you turn your steering wheel.

Also "special" for semi drivers is the way you use your brakes—especially on a slippery road. Jack-knifing is one of the biggest nightmares waiting for you if you don't operate your tractor brakes and your trailer brakes right, like it tells you in para 15-2d(1)(e), TM 21-305. When the ice 'n' snow season starts, even the most experienced semi driver practices this special braking before hitting the open road.



P.S. MORE

No matter how good you are at backing your semi, you can't see what's right behind you. If you don't have somebody with you to lend a hand, it's worth a coupla minutes to hunt up an extra set of eyes—a guy who'll make sure you don't back into something. Or, worse, somebody!

If you've got no choice but to back up without a guide, at least hop down and check good all around your rig for anything you don't want to run over or into. And if you've got to back up quite a distance, get out and check around again every 15 feet or so.

You'll rest better, too, when you know you've left your trailer the way you're s'posed to.

1 Put your tractor's gearshift in NEUTRAL and parking brake ON. Then pull your Johnny bar down to set your trailer brakes.

2 Set out your trailer's chock blocks. On level ground, chock in front of the wheels on one side and behind the wheels on the other side. On a slope, you chock either the front or in back of the wheels on both sides, depending on which way the trailer's likely to roll.

3 Shut off both air valves on your tractor, uncouple both hoses from the trailer and hang 'em up. (Although this cuts off the air supply from your tractor to your trailer's brake system, unhooking the EMERGENCY air line automatically sets the trailer brakes.)

4 Be sure to put those dummy couplings back on the trailer's air line couplings. This keeps dirt from getting into the brake system. Also, it'll help slow down rotting and cracking of the rubber washer inside.

5 Unhook the electrical cable, slap over the cover to keep out dirt 'n' moisture and hang 'er up. And make sure the cover's down on the trailer receptacle, too.

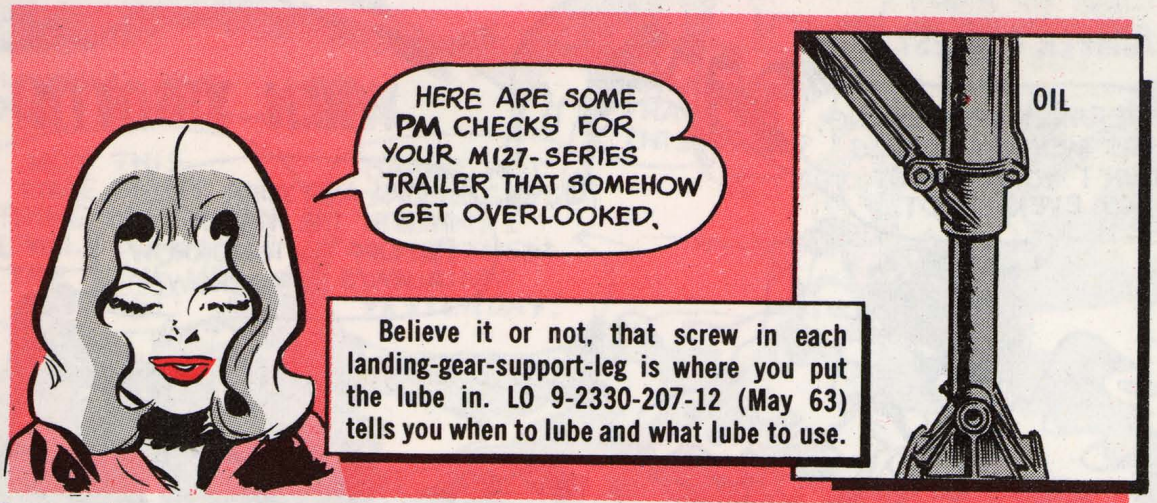
6 Always use your float pads under the trailer landing gear. Make it a habit and you won't have to worry later when rain turns that rock-like dirt into mud. Blacktop? With a hot sun and a heavy load, your landing gear feet can sink right into a blacktop mush when you don't have your float pads under there to spread the weight around. Set your pads on the ground—no need o' throwing 'em down and bustin' out the handles. Place 'em so your landing gear feet will come down right in the middle.

7 Crank down your landing gear till the feet fit firm on the float pads 'n' hang the crank back up out of the way. It's hard to believe, but some guys have pulled out from under their trailer with the landing gear still up—real embarrassing when that trailer comes crashing down.

8 Pull the lock handle to take the 5th wheel jaws off your trailer's king pin. Doublecheck—peek underneath and see that the lock-up pin is sticking out. If the hook won't release the kingpin, pull the hook handle to force it loose.

Now climb back into the cab—parking brake OFF and gear shift in FIRST—and pull your tractor out from under the trailer.

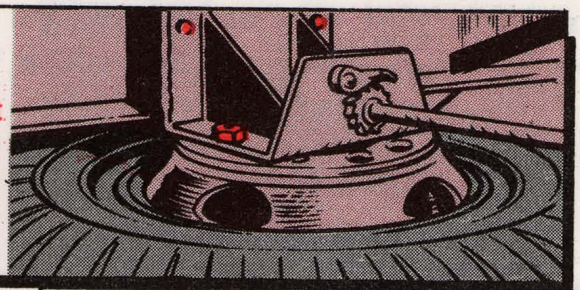
You wrap it up with your reg'lar after-operation-check—of both the tractor 'n' trailer, as spelled out in the operator's TM for each vehicle.



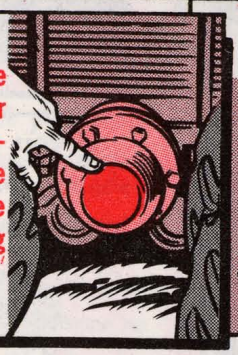
But you've got to remember to turn those landing legs all the way down before you take out the screw and give 'er the lube. Each leg gets a pint of oil. Give the oil about 15 minutes to get down into the reservoir before you crank the legs back up.

No screw? Relax. You've got the new Westran-style landing legs. They're permanently lubricated in production.

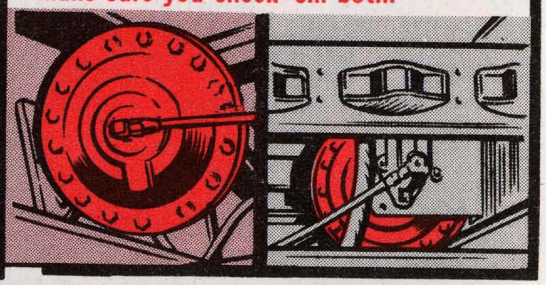
If you find your spare tire mount is cracked, it's probably because things weren't kept tight—wheel loose on the mount or mount loose on the trailer. This lets that heavy tire 'n' wheel bounce and jiggle. That's what cracks the mount. Keep those nuts 'n' bolts tight.



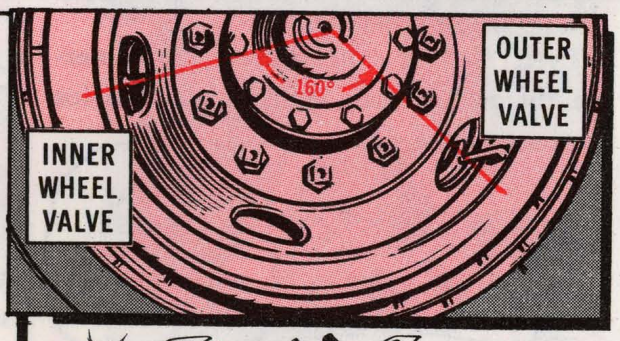
Another lube point that's missed is the spring seat bearing—both sides of your trailer, natch. It's kinda hidden down underneath. Like your LO says, you take out the plug, install a grease fitting and put the grease to 'er. Then you take out the fitting and put the plug back in.



You've got 2 master brake cylinders. Make sure you check 'em both.



On some vehicles with dual wheels, you always mount the wheels so the tire valves are 180° apart (exactly opposite each other). Like it says in TM 9-2610-200-20 (Jan 71), this makes it easier to find the valves in the dark. But this doesn't make sense for 5-hole wheels like you've got on your M127A2C—you wind up hiding the inner tire valve and making it hard to get at. So, on those 5-hole wheels, you locate the tire valves about 160° apart.



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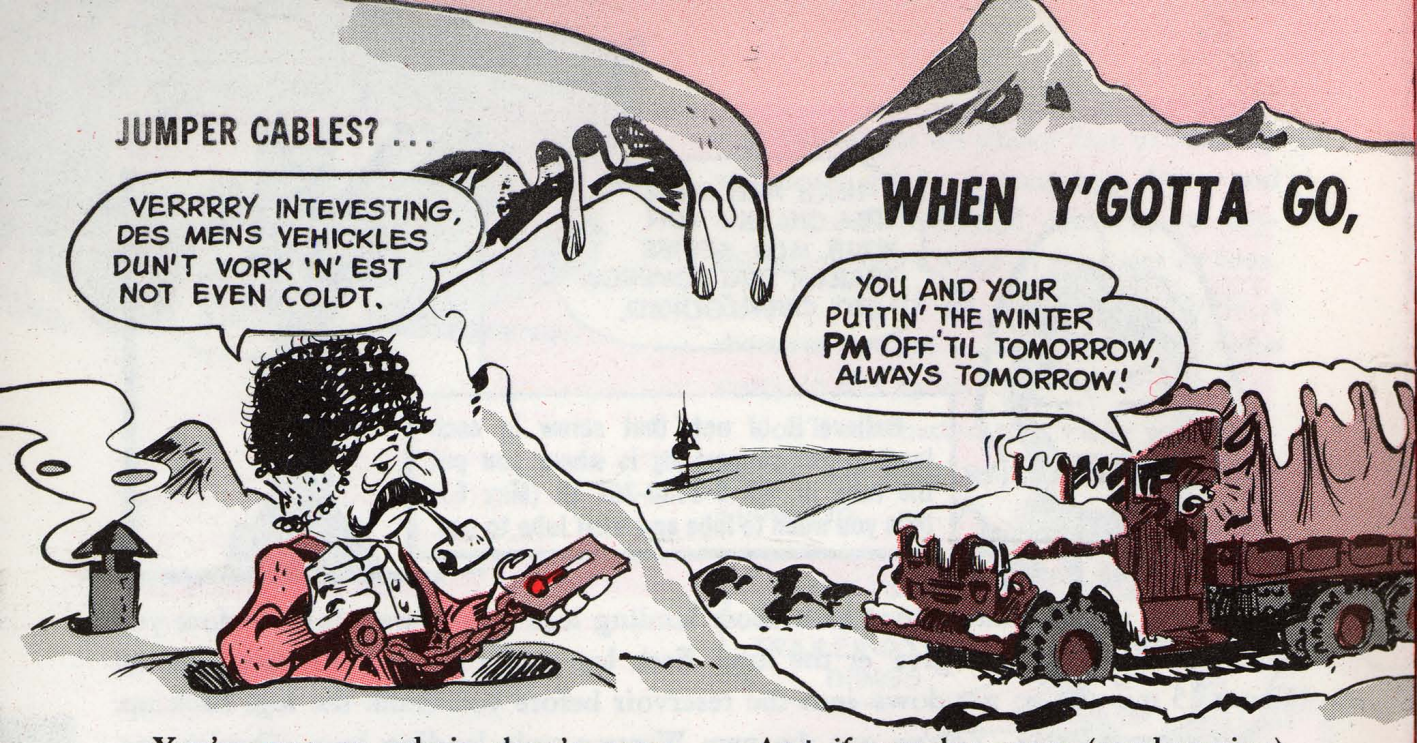
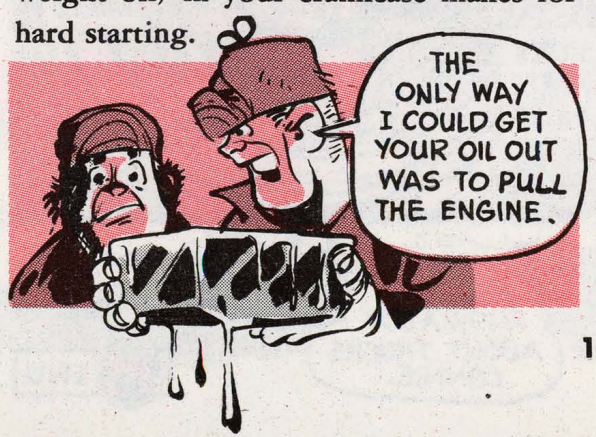
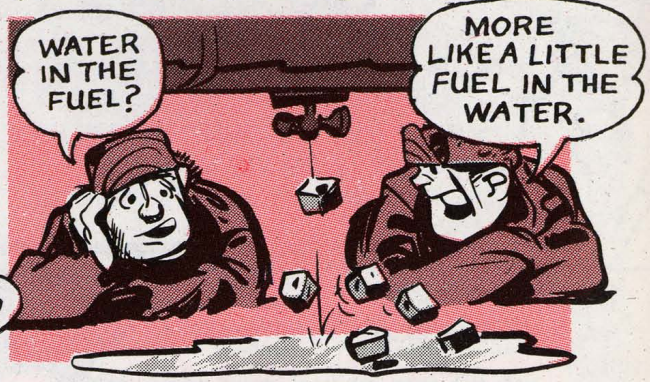


You've got to admit there's something wrong with a truck that can't be started by itself when the temperature's only down to about zero. Most starting trouble comes from bum PM—weak batteries, bad points or plugs or something else you've slid over in the charging or ignition system.

Even wrong oil (heavy, summer-weight oil) in your crankcase makes for hard starting.



And if you let water (condensation) build up in your fuel tank or fuel filters, you're askin' for starting headaches.



If you don't keep your truck in good shape for cold weather, the use of jumper cables is just a crutch.

But, true, even the best truck can suddenly pull a surprise on you—and get stubborn about starting. And you've got to get 'er goin' right now—if possible.

Before you go yellin' for help, check

JUMPER CABLES? ...

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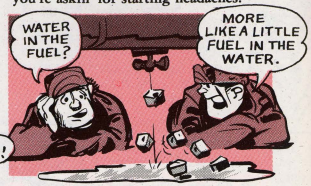

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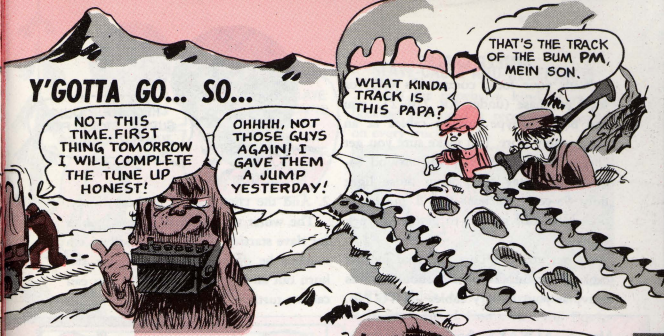
Y'GOTTA GO... SO...

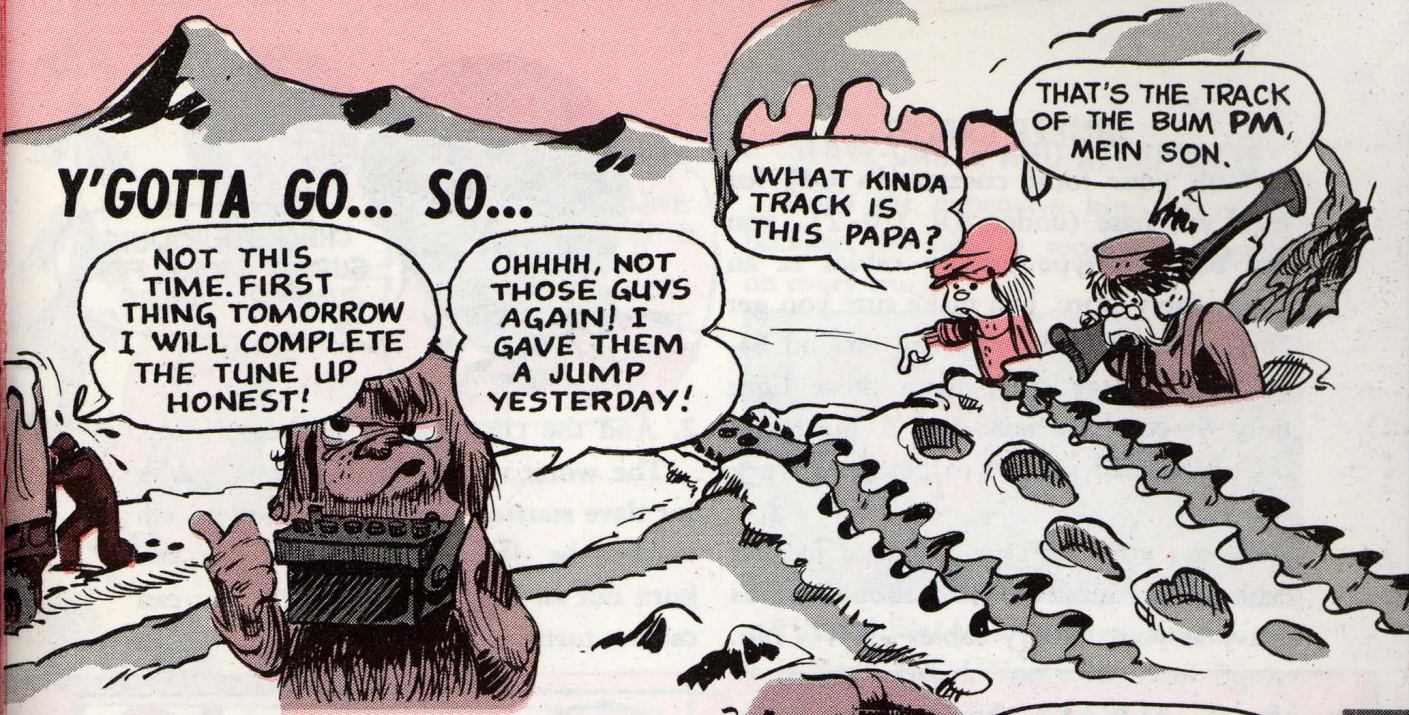


out those "Troubleshooting" tips in your operator's (-10) TM. Maybe you've just got a battery cable that needs tightening. Or there's some other simple little trouble you can fix yourself.

If you can't find the "bug", maybe a tow by another vehicle will get you rolling. This may be quicker than hunting up a slave-starting aid.

Before you tackle a tow-job, though, make doggone sure you do it exactly like your operator's TM tells you. There're special steps for tow-starting most trucks —you can really mess things up if you miss one of 'em.

PS MORE



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PS MORE

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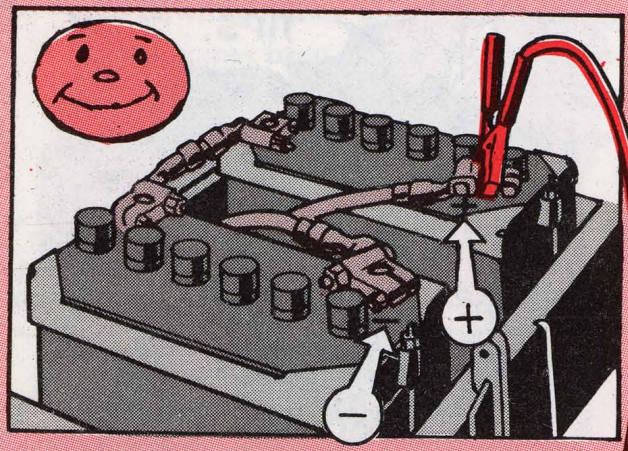
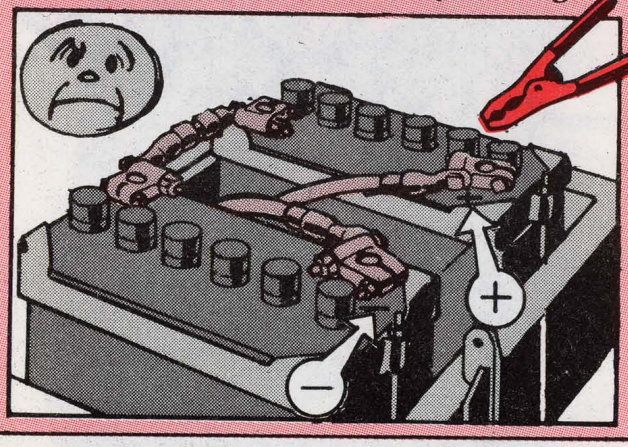
Or get your support to make jumper cables for you. The wire should be as heavy as your battery cables—AWG No. 2. And the clips should be heavy duty.

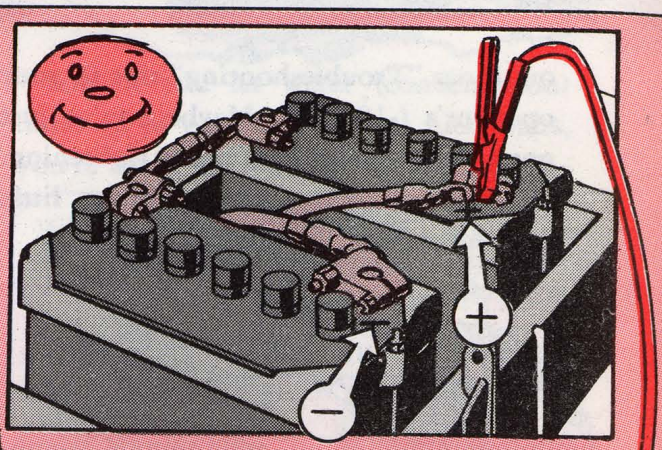
The worst trouble with jumper cables for slave starting is the guy handling 'em—when he doesn't know how. He can burn out an alternator quicker'n you can catch a turtle.

Always—ALWAYS—hook up to the "positive" (+) battery posts first. You use the red cable, if you've got a commercial-design set.

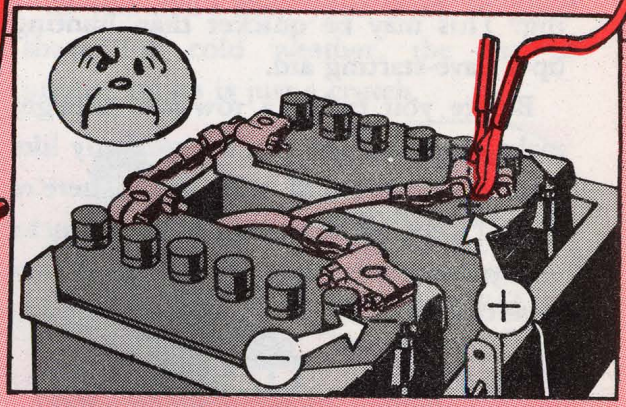


Clip one end to the "positive" battery post in the vehicle that's already running.





Then clip the other end to "positive" in the vehicle you want to start.



Be careful! Never try to handle both cables at once—or you'll probably have hot sparks snappin' at you. You can even burn a hole in a fender. Most likely you'll ruin an alternator.

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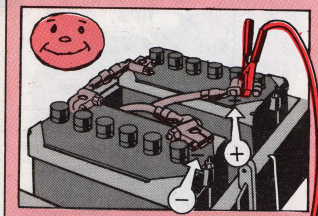

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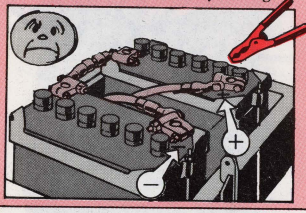

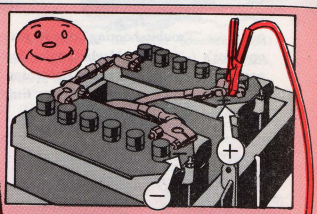

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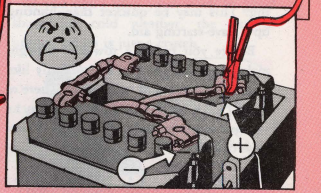
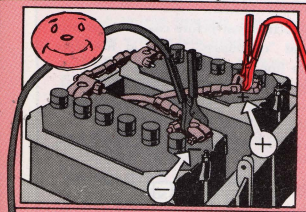
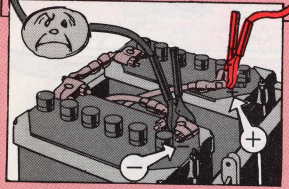


Be careful! Never try to handle both cables at once—or you'll probably have hot sparks snappin' at you. You can even burn a hole in a fender. Most likely you'll ruin an alternator.



Then hook up the black cable—"negative" (–) to "negative" (–). That's "ground" in all Army tactical trucks.

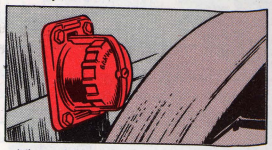


As soon as you've got the "sick" vehicle started, unhook one end of the "ground" (black) cable—then the other.

Then unhook the "positive" (red) cable.

SLAVE-CABLE-AND-RECEPTACLE

This's the expensive kind of crutch, because you need a receptacle installed on every truck.

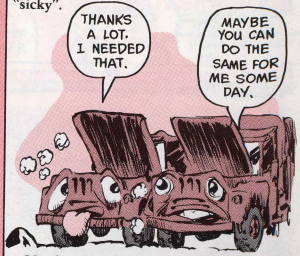


The cable's easy—you've already got it in your No. 1 Common Shop Equipment.

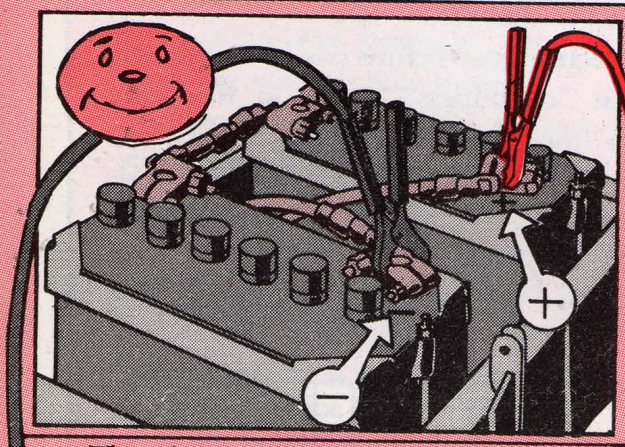
For the receptacle, take a look at SB 9-16 (Aug 70) where it says the receptacle is "authorized for use ... where the average temperature for the coldest month of the year is +5°F or lower."

Although this receptacle is normally part of the complete winterization kit, you can get it alone under its own FSN—listed in the -20P TM for your vehicle.

You just plug one end of the cable into the receptacle on the truck with power—and the other end into the receptacle on "sicky".



Natch, as soon as you've got "sicky" perkin' again, you unhook the cable—both ends.



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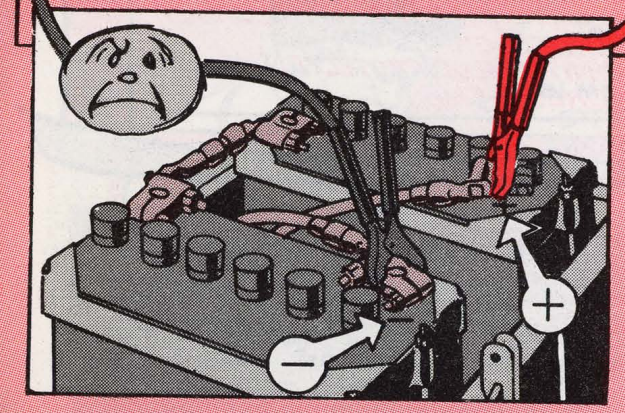

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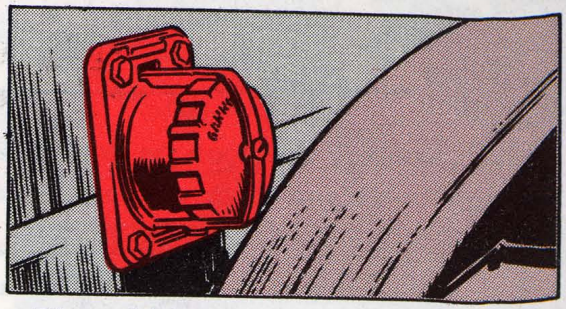

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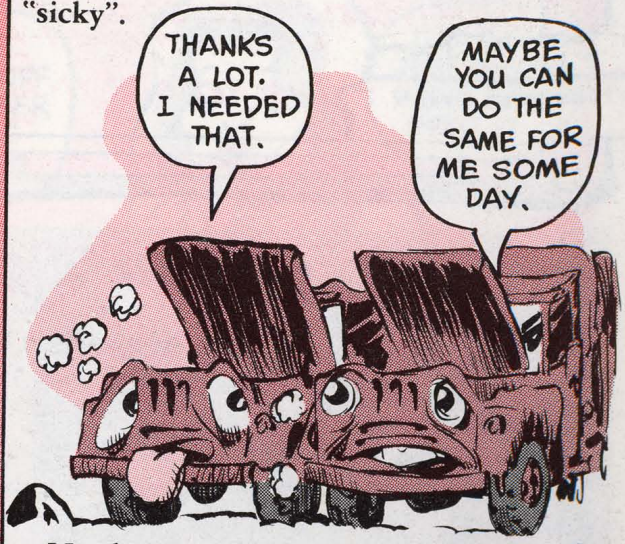

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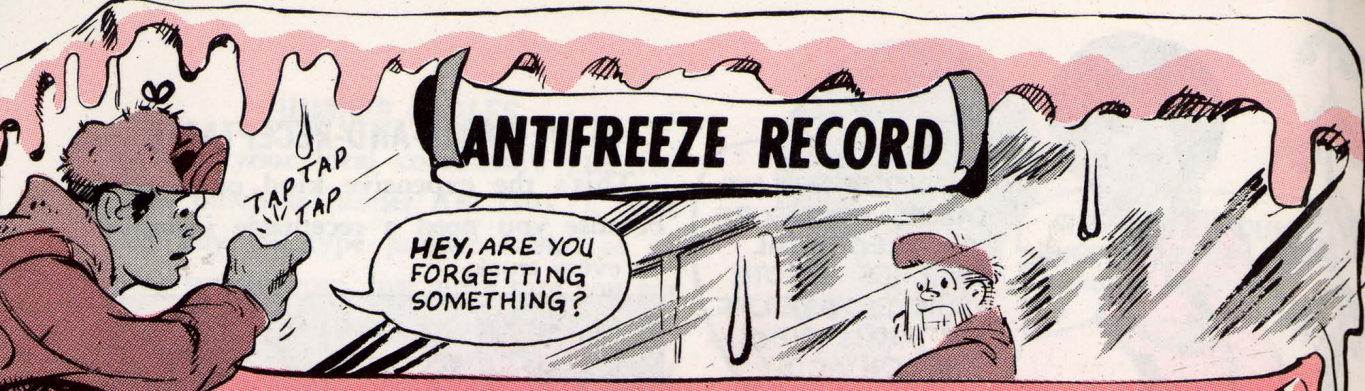
PS END



Like recording the poop on your DA Form 2408-1 (Daily) or DA Form 2409 (monthly) when you check your engine cooling system for—

Freeze protection | Reserve alkalinity | Cleanliness

You make this check semiannually for trucks and most other equipment with liquid cooled engines—quarterly for tracked combat vehicles.

Natch, you make sure you've got freeze protection just before cold weather sets in (and you'll hit the "reserve alkalinity" and "cleanliness" angles at the same time). So, along about the time that ol' March lion roars out and the April lamb bounces in, you'll hit all 3 again. Put the poop on your 2408-1 or 2409 every time.

Everything you want to know is in TB 750-651 (Jan 71), Use Of Antifreeze Solutions and Cleaning Compounds In Engine Cooling Systems.

How about commercial automotive engines? The story's the same—like it says in TB 750-982-2 (Apr 71), Article 3-4.

REMARKS

ANTIFREEZE: PROTECTED TO -20° 4 OCT 70
CHECKED 4 APR 71 - ALKALINITY-BLUE/PROTECTED TO-20°
CLEANLINESS-OK
CHECKED 8 OCT 71 - ALKALINITY-BLUE/PROTECTED TO-15°
CLEANLINESS-FAIR

DA FORM 2408-1, 1 May 67

NEED TACOM EIR DIGEST?

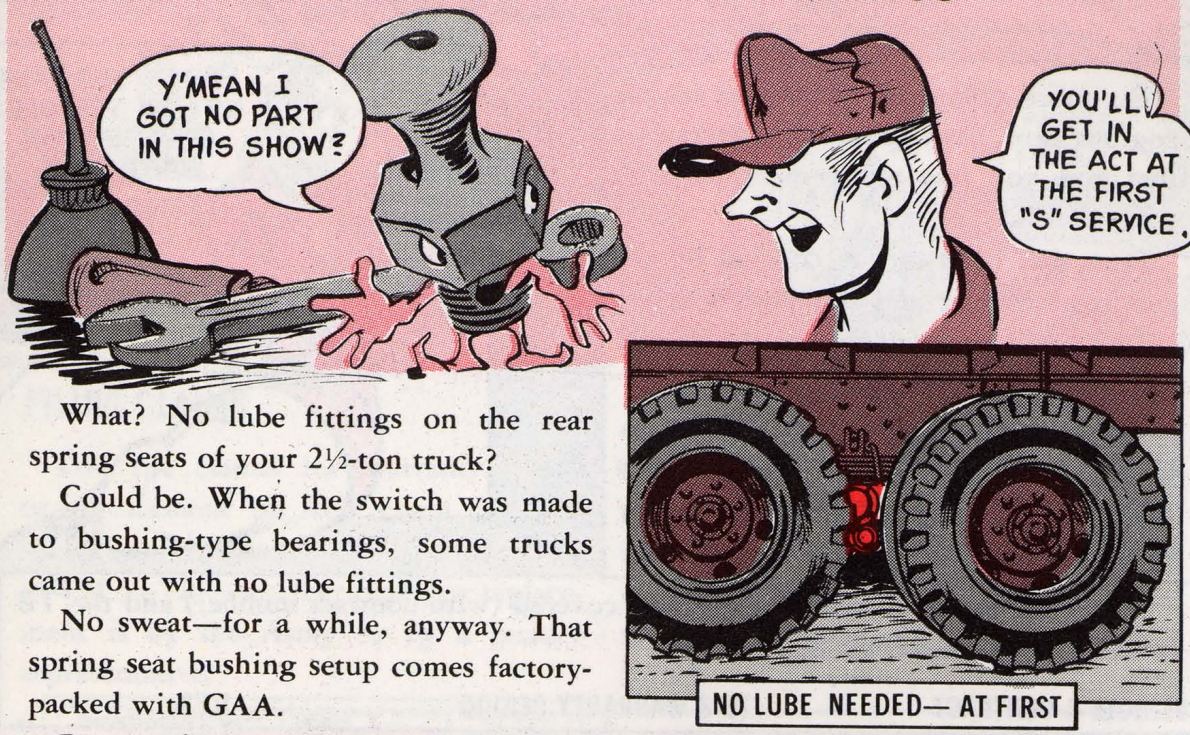
Some units haven't been getting the TB 750-981-series (Equipment Improvement Report and Maintenance Digest, Tank And Automotive Equipment), because only 5 copies went to each pinpoint account.

There's no reason now, though, that everybody can't get all they need. Just tell your pubs supply man to put the number "Quantities" on page 5, DA Form 12-38 (1 Apr 71).

Same goes for the TB 750-982-series, Equipment Improvement Report And Maintenance Digest, Commercial Automotive Equipment.

There's a lot of good maintenance poop for everybody in these TB's.

LUBE FITTINGS FOR SPRINGS



What? No lube fittings on the rear spring seats of your 2½-ton truck?

Could be. When the switch was made to bushing-type bearings, some trucks came out with no lube fittings.

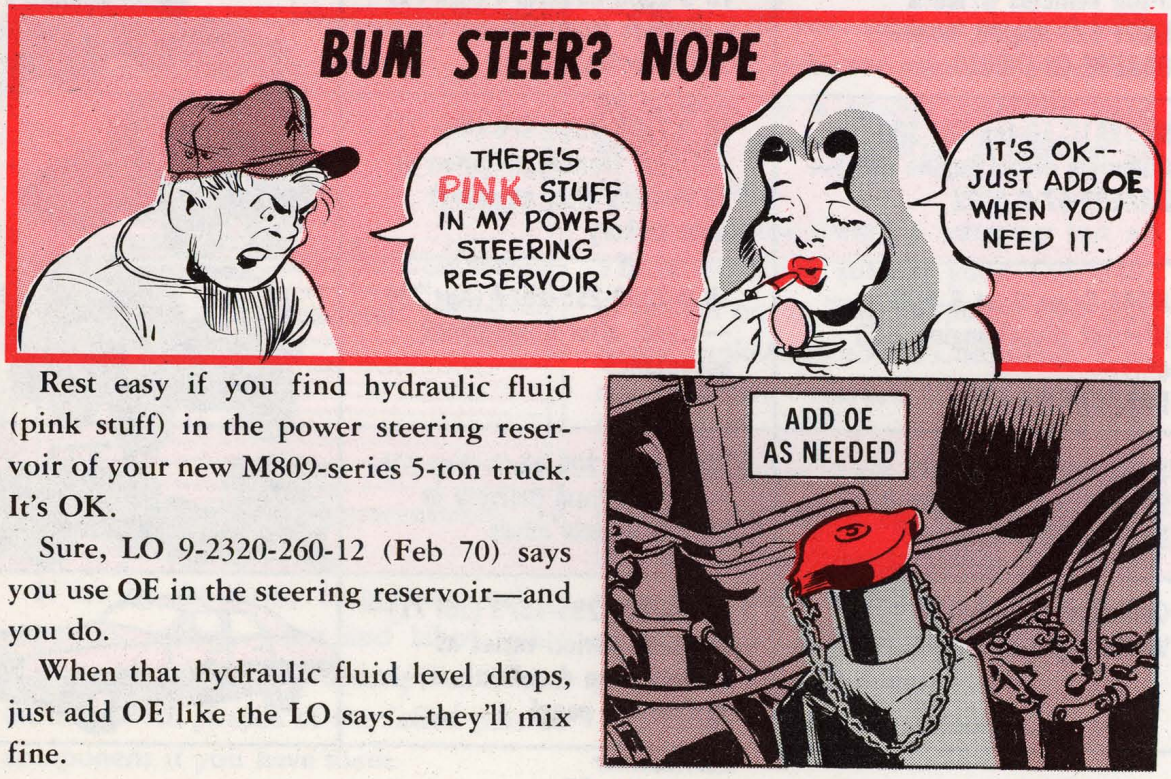
No sweat—for a while, anyway. That spring seat bushing setup comes factory-packed with GAA.

But you fix 'er up for regular lubing when your truck's in for its first S service—or sooner, if it's in the shop for work on the springs.

The poop on drilling 'n' tapping for a grease fitting is in TB 750-981-3 (Jul 71). The same dope'll be showing up in a change to TM 9-2320-209-20.

Then you lube like the LO says.

BUM STEER? NOPE

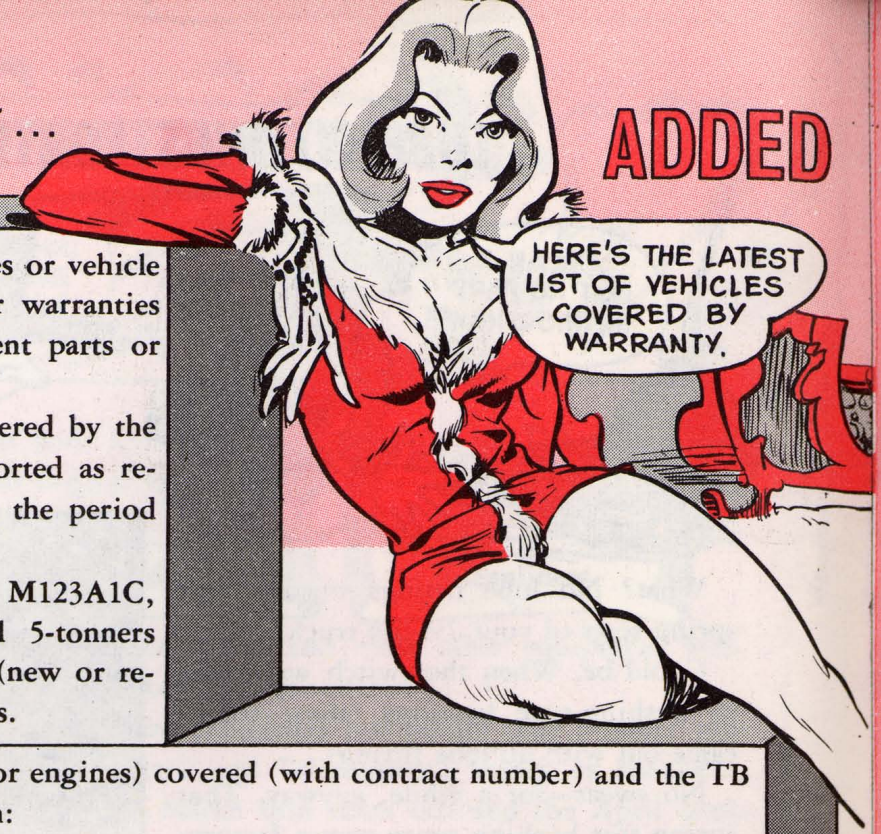


Rest easy if you find hydraulic fluid (pink stuff) in the power steering reservoir of your new M809-series 5-ton truck. It's OK.

Sure, LO 9-2320-260-12 (Feb 70) says you use OE in the steering reservoir—and you do.

When that hydraulic fluid level drops, just add OE like the LO says—they'll mix fine.

TRUCKS AND ENGINES GET ... ADDED

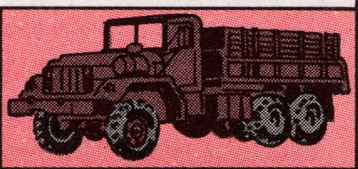
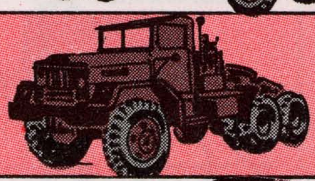
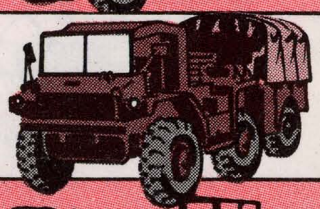
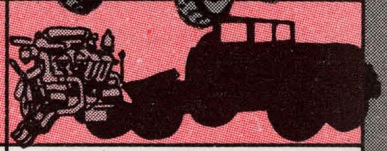
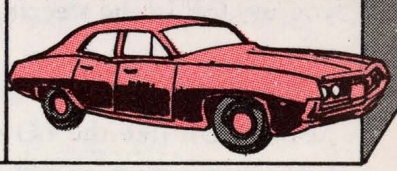


Six more groups of vehicles or vehicle engines now have contractor warranties that give you free replacement parts or components.

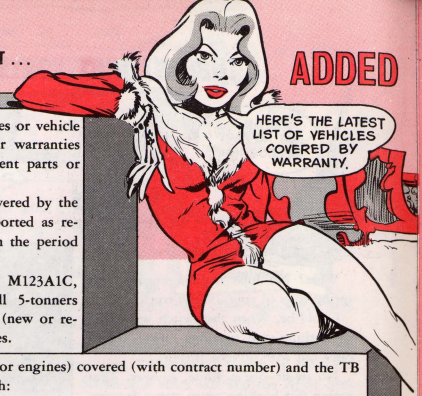
Free, that is, if they're covered by the purchase contract and if reported as required when they fail within the period covered by the warranty.

The 6 groups include the M123A1C, M561 and M792, M809, all 5-tonners with the ENDT 673 engine (new or rebuilt) and commercial vehicles.

Here's the list of vehicles (or engines) covered (with contract number) and the TB with warranty period for each:

VEHICLE & CONTRACT	TB & WARRANTY PERIOD	ITEM
M809 series 5-ton w/Cummins NHC 250 diesel engine & steering gear—DAAE06-69-C-0009	TB 9-2300-295-15/3 (May 71)—3 years from delivery or 50,000 vehicle miles (whichever comes first)	
5-ton Vehicles w/Mack ENDT 673 engine, new—DAAE06-68-C-0010	TB 9-2300-295-15/4 (Apr 71)—3 years from delivery or 50,000 vehicle miles	
M123A1C 10-ton (V8 300 Cummins diesel engine only)—DAAE07-67-C-5022	TB 9-2300-295-15/6 (Mar 71)—1 year from installation or 18 months after shipment from factory	
M561 Gama Goat & M792 (Detroit diesel engine 3-53 only)—DAAE07-68-C-2597	TB 9-2300-295-15/7 (Apr 71)—1 year after Government acceptance	
5-ton Vehicles w/Mack ENDT 673 engine, rebuilt—DAAE07-70-C-4651	TB 9-2300-295-15/8 (Sep 71)—2 years from delivery or 25,000 vehicle miles	
Commercial Design Vehicles (GEN)	TB 9-2300-295-15/9 (Jul 71)—warranty period varies as indicated on decal on instrument panel	

TRUCKS AND ENGINES GET . . . ADDED



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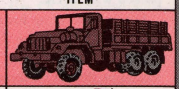
M809 series 5-ton w/Cummins NHC 250 diesel engine & steering gear—DAAE06-69-C-0009	TB 9-2300-295-15/3 (May 71)—3 years from delivery or 50,000 vehicle miles (whichever comes first)	
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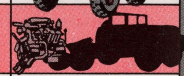
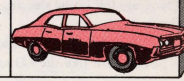
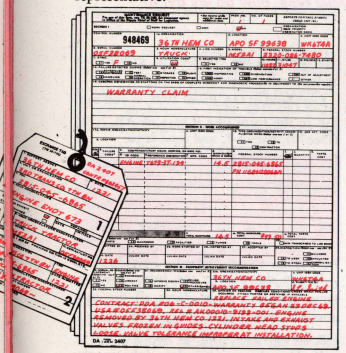
5-ton Vehicles w/Mack ENDT 673 engine, rebuilt—DAAE07-70-C-4651	TB 9-2300-295-15/8 (Sep 71)—2 years from delivery or 25,000 vehicle miles	
Commercial Design Vehicles (GEN)	TB 9-2300-295-15/9 (Jul 71)—warranty period varies as indicated on decal on instrument panel	

WARRANTIES

FILING CLAIMS

You file claims for warranty repair or replacement on DA Form 2407 as spelled out in para 3-7.4.2 and Fig 3-22 of TM 38-750—whether repair or replacement is by the Army or by a factory representative.



If it's by a factory representative, list value of parts and labor.

If it's by the Army (organizational or support), include parts and labor value along with a complete description of the failure—with photos of the failed part or component if you have them.

Until the warranty claim is approved, the failed part or component should be tagged with a DA Form 2402 as spelled out in TM 38-750. (Put the end item identification—including serial or USA number—and the control number from the DA 2407 warranty claim on the DA 2402.)

NOTE: WARRANTY CLAIMS DON'T APPLY WHEN FAILURE RESULTS FROM COMBAT, ACCIDENT, MISUSE OR NEGLECT. SEE GENERAL WARRANTY POLICIES IN TB 9-2300-295-15-SERIES.

Check with your support on local SOP. The M809 contractor asks to be notified of failures by a special warranty card, and there may be special guidelines on other items.

If you know there's a warranty but no TB is available, submit your DA 2407 as spelled out in TM 38-750 to: CG, U.S. Army Tank-Automotive Command, Warren, MI 48090—marked ATTN: AMSTA-M.

If DA Form 2408-8 doesn't list the warranty period for the equipment, give the date of manufacture from the equipment data plate. You'll get back info on claim status and warranty exhibit disposition within 90 days.

So don't pay twice for those parts with warranties.

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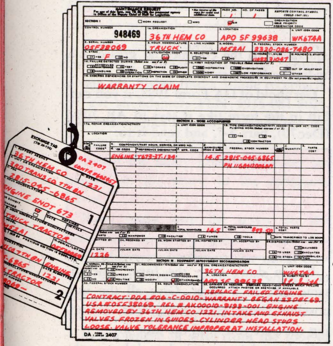
MAINTENANCE REQUEST
948469
36TH HEM CO
APO SF 99638
WK6T4A
05F38069
TRUCK
M52A1
2320-086-7480
WARRANTY CLAIM
ENGINE T673-3T-134
14.5 2815-045-6865
1226
36TH HEM CO
WK6T4A
APO SF 99638
REPLACE FAILED ENGINE
CONTRACT: DDA 806-C-0010-WARRANTY BEGAN 23DEC69. USA#05F38069, REL # AK00010-9198-001. ENGINE REMOVED BY 36TH HEM CO 1221. INTAKE AND EXHAUST VALVES FROZEN IN GUIDES. CYLINDER HEAD STUDS LOOSE. VALVE TOLERANCE IMPROPER AT INSTALLATION.
DA FORM 2407
EXCHANGE TAG
36TH HEM CO
DA 2407
CONTR#
1221
2815-045-6865
ENGINE ENOT 673
TRUCK TRACTOR
M52A1

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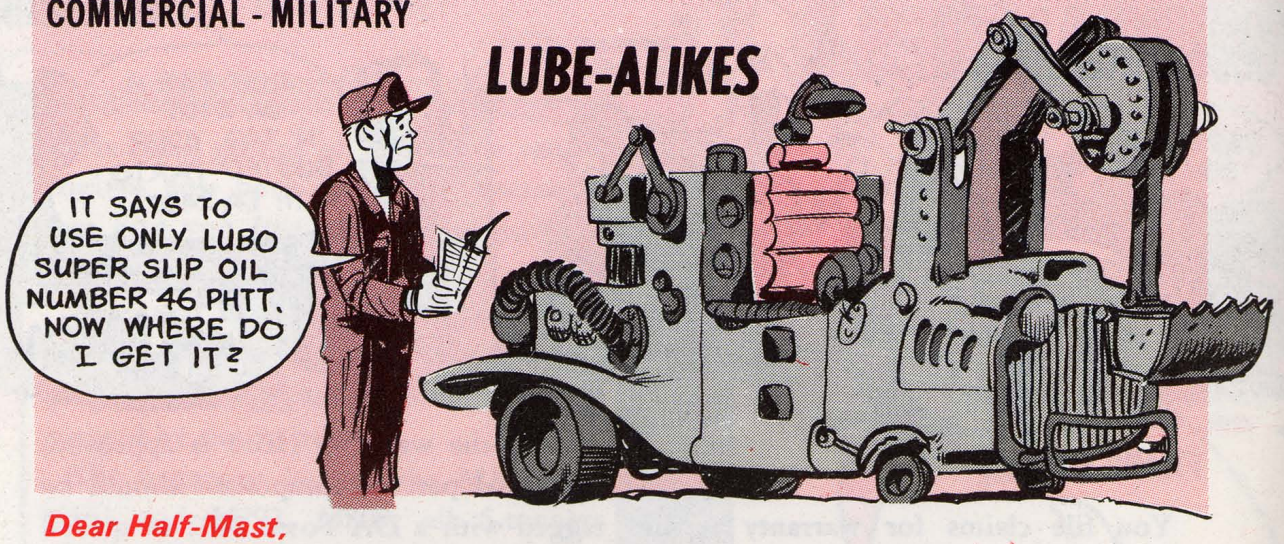
COMMERCIAL - MILITARY

LUBE-ALIKES



Dear Half-Mast,

We've got a lot of different kinds of commercial-design equipment. Maintenance info for most of these items is in commercial pubs that came with the equipment. In a few cases, the pubs are Army TM's, but the info is commercial—pretty much a commercial pub with TM covers.

The problem is lubricants—grease, oil, hydraulic fluid, etc.

When the specified lube is a commercial type, how do we get it?

CW3 R.E.C.

Dear Mr. R.E.C.,

The U.S. Army Petroleum Center will lend a hand. They'll tell you what the Army supply system has to offer as an equivalent to the commercial grease, oil, hydraulic fluid, etc.

Get ahold of DA Form 1988, if you can. Fill in the form like it says in AR 708-1 (Dec70), para 3-7, and send it to:

Commanding Officer
U.S. Army Petroleum Center
ATTN: AMXPC- LS
Cameron Station
Alexandria, VA 22314

If you don't have the form, put the same info in a letter. Give all the info possible about your equipment, including the part you need the lube for.

If there is no equivalent lube in the Army supply system, you'll have to order what you need just as it's specified in the equipment publication. Your supply support will see to getting it for you by local purchase—per AR 715-30, Local Purchase of Civilian Type Items.

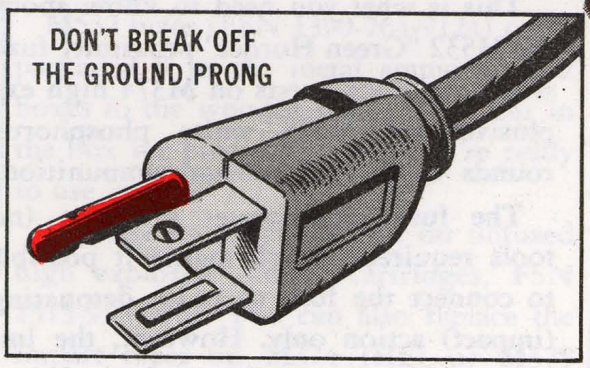
A short-sighted short-cut on electric cord plugs can short-circuit you and your career in pretty short order.

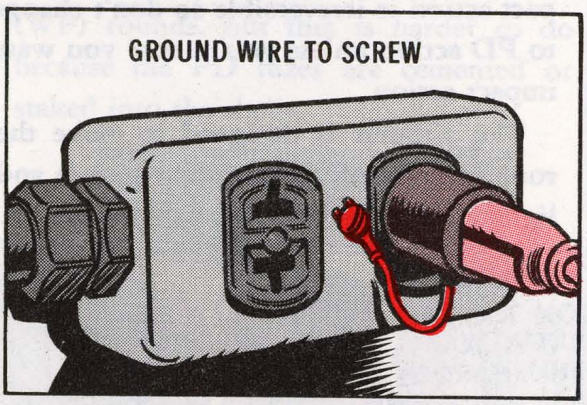
If your electric tools have a 3-pronged cord plug, never break the ground prong off. Either find a 3-hole receptacle, or get an adapter, FSN 5935-081-8025, that has 3 holes for the 3 prongs but has 2 prongs that'll fit the receptacle.

Fasten the safety ground wire on the adapter to the screw in the receptacle cover.

First, make sure the screw in the receptacle cover is a good ground. Remove the cover and check for metal conduit, armored cable, or ground wire. You can also use an ohmmeter on the screw to make sure it leads to ground.

Run a length of wire from the tool to the receptacle, metal conduit, water pipe, or an iron or steel rod at least ⅝-inch in diameter driven at least 8 feet into the ground except where you get a rock bottom. If you can't drive that rod 4 feet or more, then use an 8 foot rod and bury it in a horizontal trench.





If your portable tools and appliances aren't protected by an approved system of double insulation, or its equivalent, then your tools should be grounded. If your tools are double insulated they will be marked. They usually do not have a cord with a 3-prong plugs.

FIREPOWER

FOR 81-MM MORTARS . . .

M532 (GREEN HORNET)

FUZE NEWS

This is what you need to know about the M532 "Green Hornet" proximity fuze which gives air bursts on M374 high explosive and M375 white phosphorus rounds of 81-MM mortar ammunition.

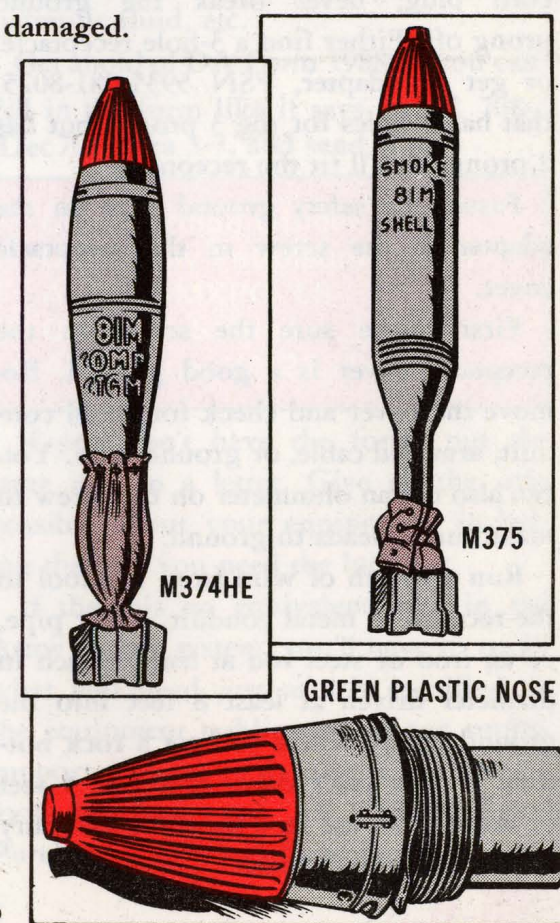
The fuze incorporates a device (no tools required) which makes it possible to connect the fuze to point detonating (impact) action only. However, the impact action is irreversible so don't change to PD action unless you're sure you want impact action.

The airburst is designed to make the rounds more effective against people and light vehicles by bursting before it lands.

The M532 looks different from other mortar fuzes because of its green plastic nose.

This plastic is not as strong as metal, so use reasonable care not to drop or crush it. It's necessary for the fuze's operation.

Like with any other ammo, you never handle or use the Green Hornet if it looks damaged.



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M532 fuzes (FSN 1390-764-9124) come packaged 8 to the metal ammo box, 2 boxes to the wooden crate. Keep 'em in the box for protection until you're ready to use 'em.

It's easy to install M532's on unfuzed high explosive mortar cartridges, FSN 1315-935-6013. You can also replace the impact fuzes on M374 (HE) or M375 (WP) rounds, but this is harder to do because the PD fuzes are cemented or staked into the shells.

PS MORE

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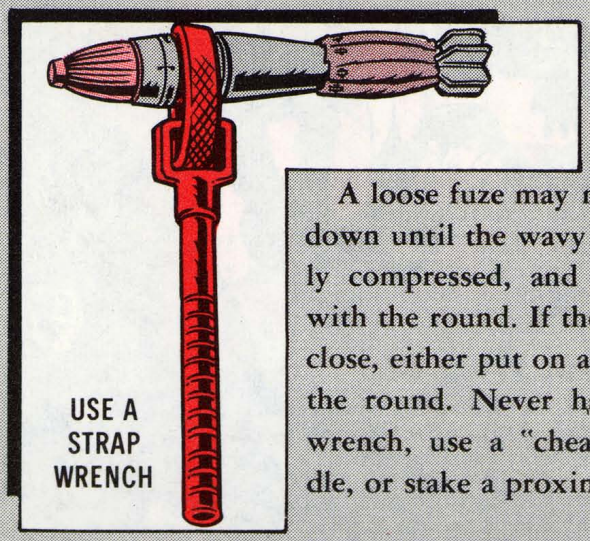
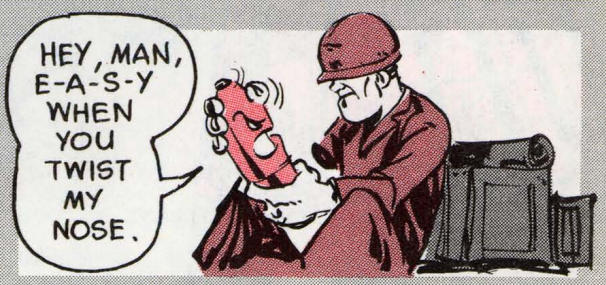
P.S. MORE



Use a strap wrench to hold the cartridge and an M18 fuze wrench to take out the PD fuze and install the proximity fuze.

A loose fuze may not work, so snug it down until the wavy washer is completely compressed, and makes a tight seal with the round. If there's a gap you can't close, either put on another fuze or reject the round. Never hammer on the fuze wrench, use a "cheater" extension handle, or stake a proximity fuze.

You don't tighten the fuze by holding it by its green nose and turning. Reason: When the nose is twisted at least a third of a turn in either direction the M532 is converted from a proximity fuze to a point detonating (PD) fuze.

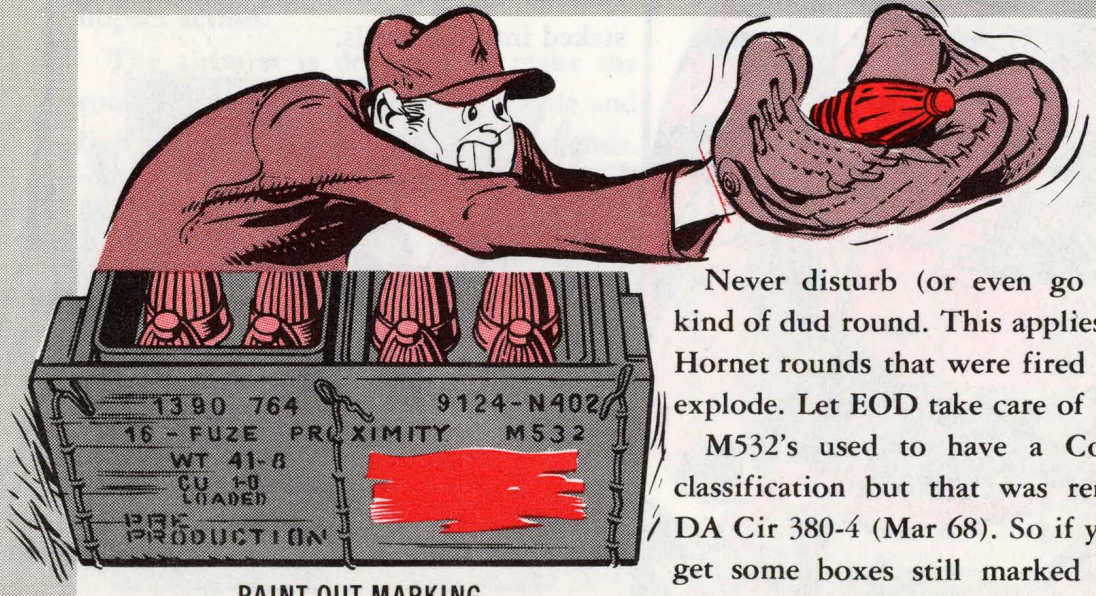


The M532 is made this way so it can be used in all terrain conditions including firing into heavy tree canopy.

However, once you turn the fuze ... that's it ... it's permanently converted to point detonating (PD), and you can't change it back to proximity operation.

The M532 is not built to work at Charge 0. Some will, but you'll get a lot of duds. Use Charge 1 or higher to give the arming clock enough time to complete its cycle.

You can get hurt if you try to take this or any other fuze apart. It's a good idea not to use or even handle any fuze or fuzed round that seems to be damaged or is in a container that was damaged by dropping or other mishandling.



PAINT OUT MARKING

Never disturb (or even go near) any kind of dud round. This applies to Green Hornet rounds that were fired but didn't explode. Let EOD take care of 'em.

M532's used to have a Confidential classification but that was removed by DA Cir 380-4 (Mar 68). So if you should get some boxes still marked Confidential, paint out the marking.

You're driving your tank—an M60, M60A1 or M48A3—and suddenly you can't brake and you can't steer.

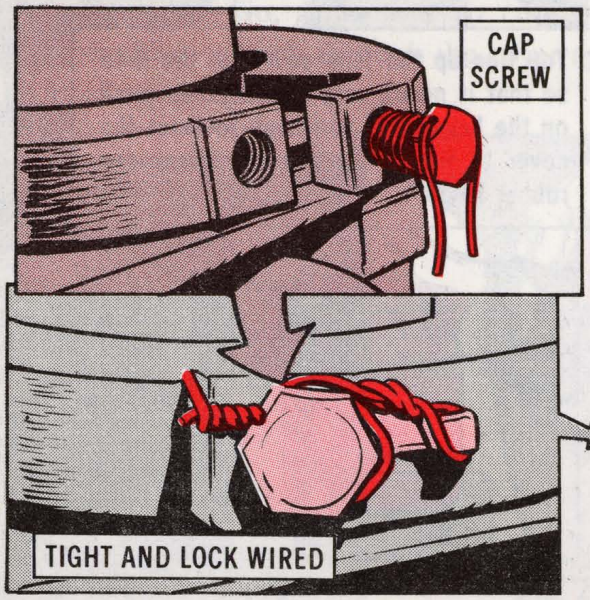
A nightmare?

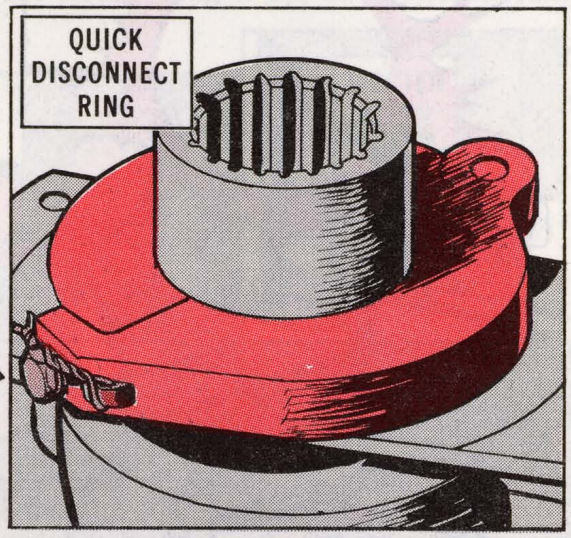
It can really happen, but it won't ... Not so long as you check out the cap screws on the quick disconnect rings of your final drives.

Pages 2-195 and 2-397 of TM 9-2350-215-20 (Feb 65) show how to install the locking wire, FSN 9505-191-3680 (1/16 inch thick), through the cap screw, FSN 5305-939-9267, on the quick-disconnect ring of the final-drive assembly.

The nightmare can only happen if the cap screw vibrates loose and falls out (which it can't do if it's lockwired). This lets the quick disconnect ring drop off and then you can't brake or steer.

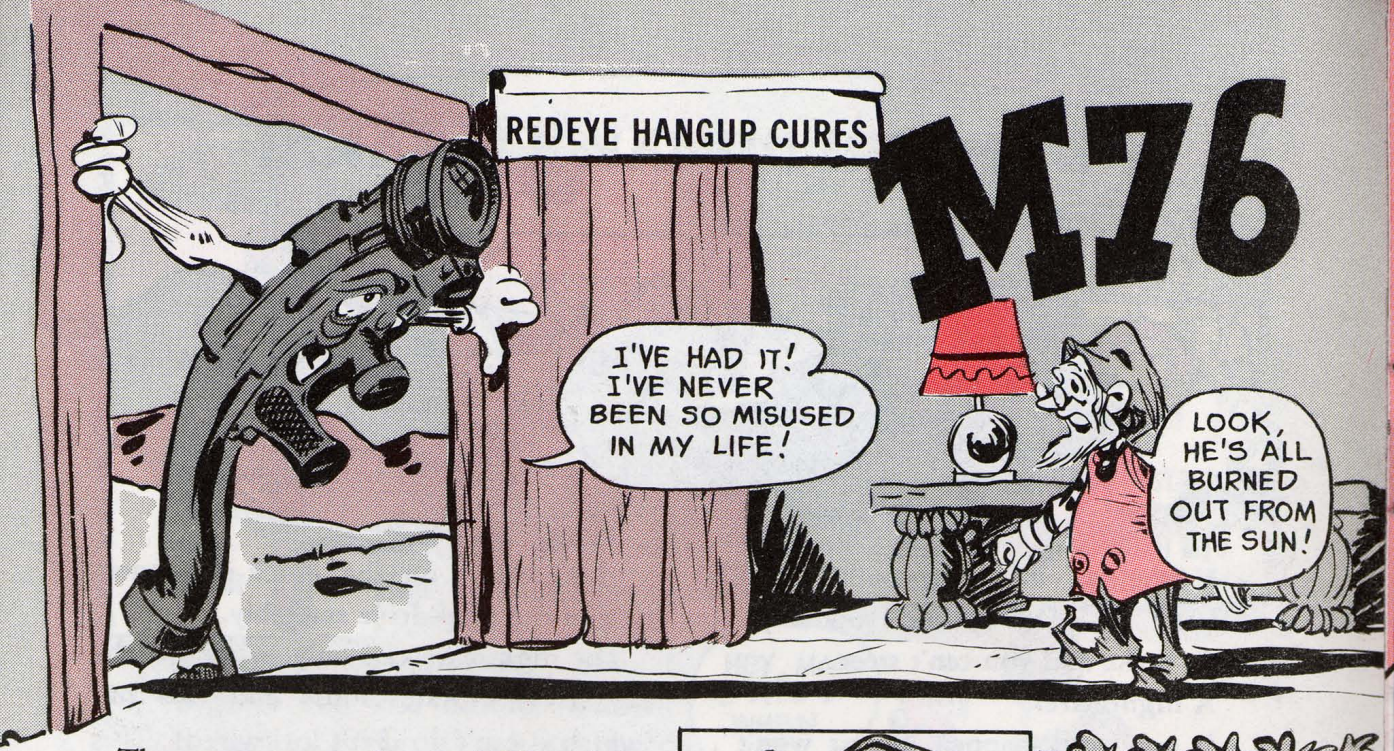
So check the cap screws to make sure they're tight and lock wired, 'specially after removing or installing the tank power plant or universal joint. Do this and you'll never have a nightmare in the daytime.





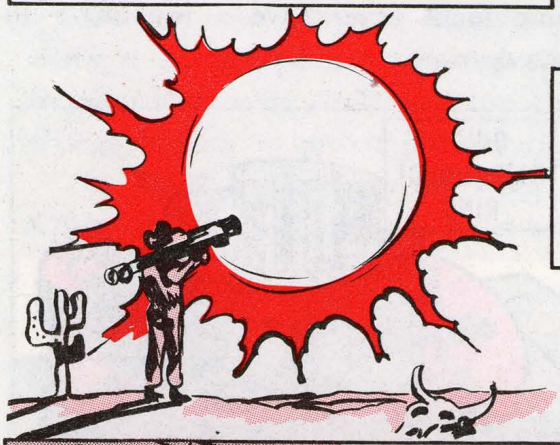
M728 OBTURATOR PAD

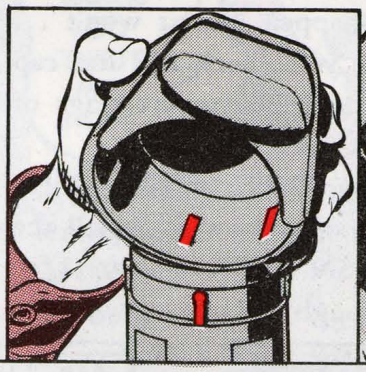
Obturator pad worn out on the main gun of your M728 combat engineer vehicle? Get a new one and a replacement shim set under FSN 1025-127-2976. It's better than the one listed in TM 9-2300-378-20P/2-2 (Aug 69).



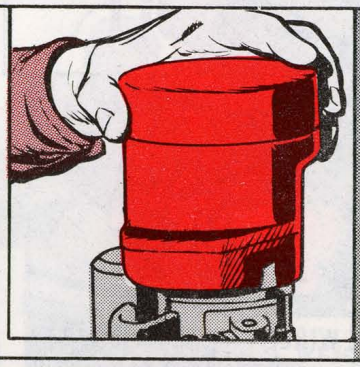
The components of your M76 training set (Redeye) can do a mighty effective job for you, providing ...

1. You don't point the M49 trainer at the sun. If you do, you'll have to wait a coupla days before you can use it again.

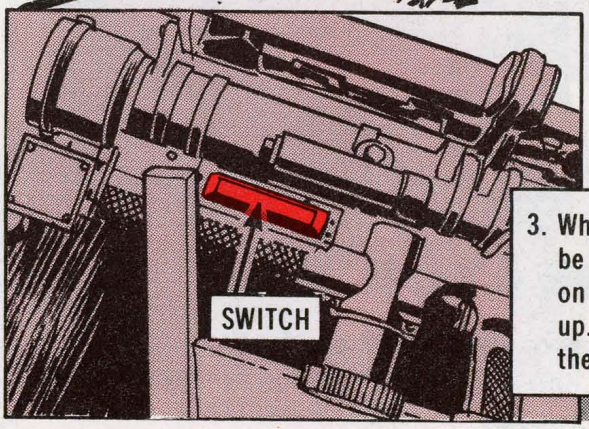




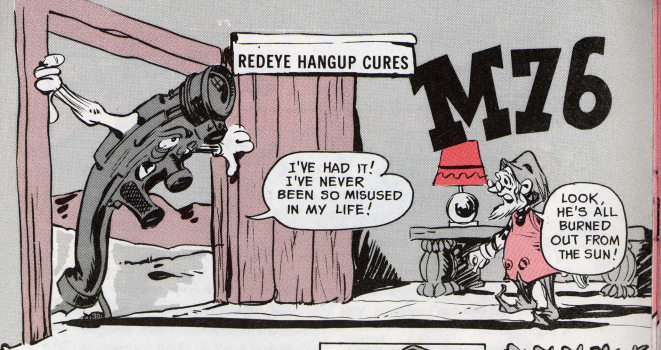
2. You line up the lens cover on the M49 so that it needs only a straight-in push on the keyway. If you have to twist the cover to line it up you can break the rubber keys ...



MISHANDLING OF YOUR M76 TRAINER CAN CAUSE SOME BIG HEADACHES.



3. When you lay the trainer on a stand be careful not to snag the rubber boot on the uncaging switch. You can tear it up. Rest the trainer on the side opposite the switch.



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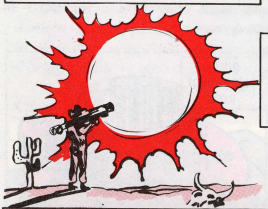

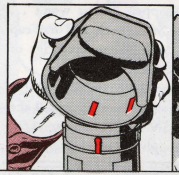

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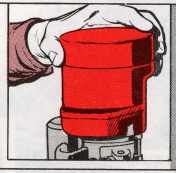

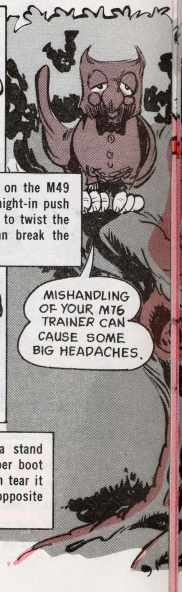

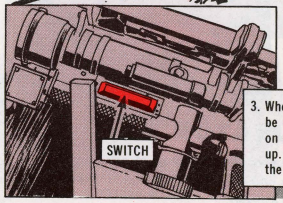

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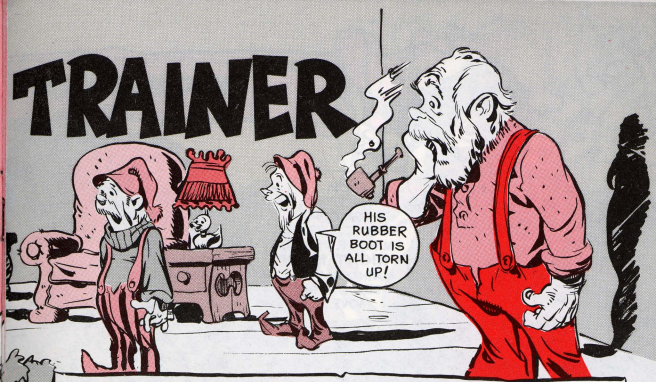
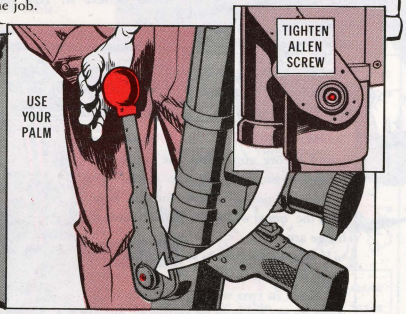


For a change of pace, read the gas pump handle warning on page 2-8 of TM 9-6920-428-12. The people who wrote the book weren't kidding when they said use the palm of your hand when you return the pump to stored position.

If you wrap your hand around it, your fingers can get squeezed between the handle and the chassis. And man, that hurts like—you wouldn't want it to.

Another point on the pump handle: if it has an inch or more of play, the Allen screw is loose. So, a fast way to cure it is to remove the setscrew and insert a 5/32-in Allen wrench through the cover to the screw. Snug it up, but forget muscle. A slight pressure does the job.



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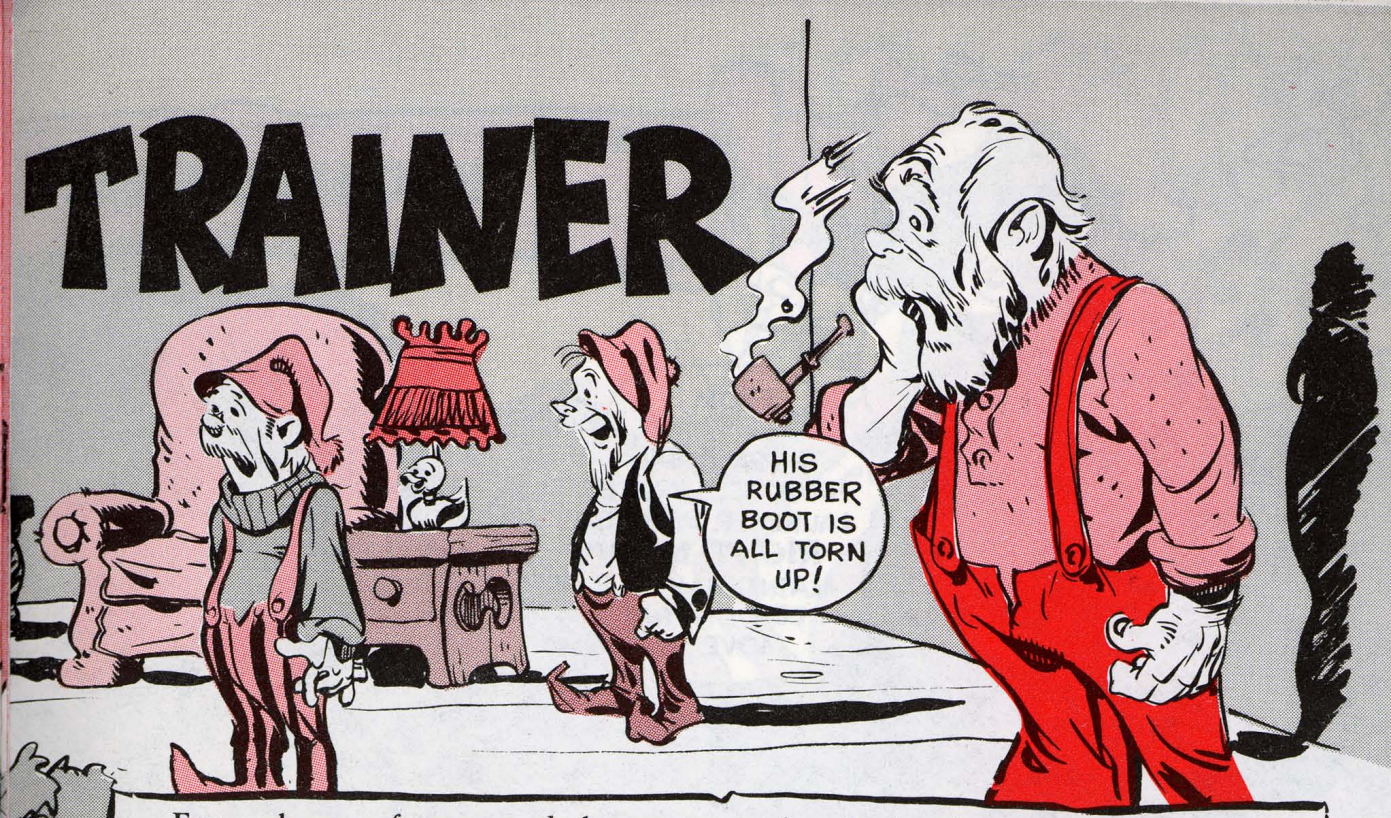
TRAINER



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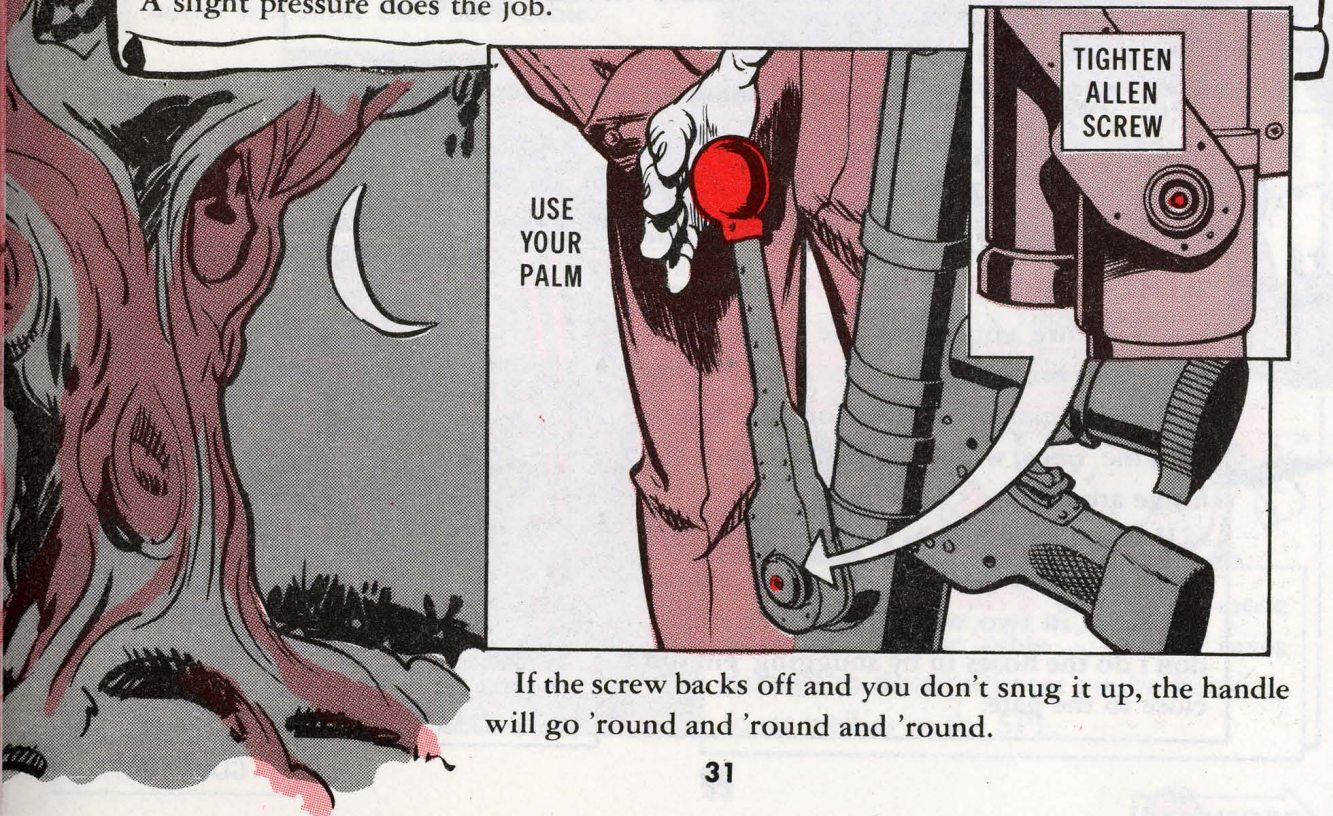

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HAWK SPL . . . FROM ENGINE

FROM ENGINE TO TAILGATE, THE HAWK SELF-PROPELLED LAUNCHER DEMANDS **RIGHT NOW** MAINTENANCE TO KEEP ON THE MOVE.

TO START AT THE BOTTOM look at the tracks.

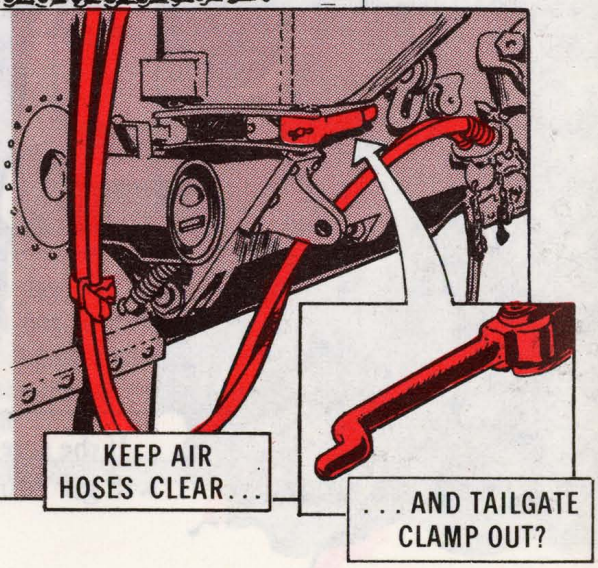
You've gotta keep 'em adjusted like the TM says. Either that, or figure a real groan of a job getting a track back on if you throw it.

Dont believe it? Ask the guy who's done it.

THE TAILGATE CLAMP must be released before you lower the tailgate . . . to prevent breaking the lever catch.

And tailgating is bad for air hoses, like the ones which dangle around the hinge area.

If the hoses aren't strung down and away from the tailgate, the gate can cut the hoses in two when you lower it. So, don't do the hoses in by snugging 'em too close to the gate.



HAWK SPL ... FROM ENGINE TO TAILGATE

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FLUNK YOUR PM AND YOU'RE MINE.

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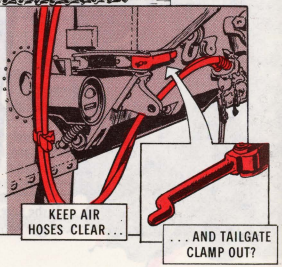
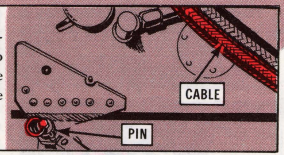
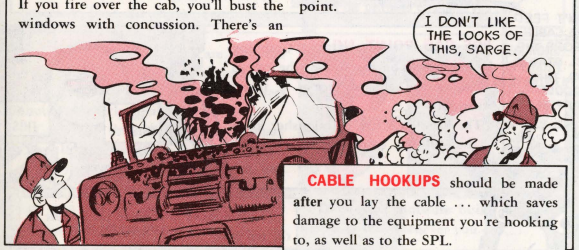


THE LAUNCHER A-FRAME quick-release pin, which holds the A-frame to the boom, must be out when the A-frame is disconnected for firing. Otherwise, the boom will shear the P3008 cable.



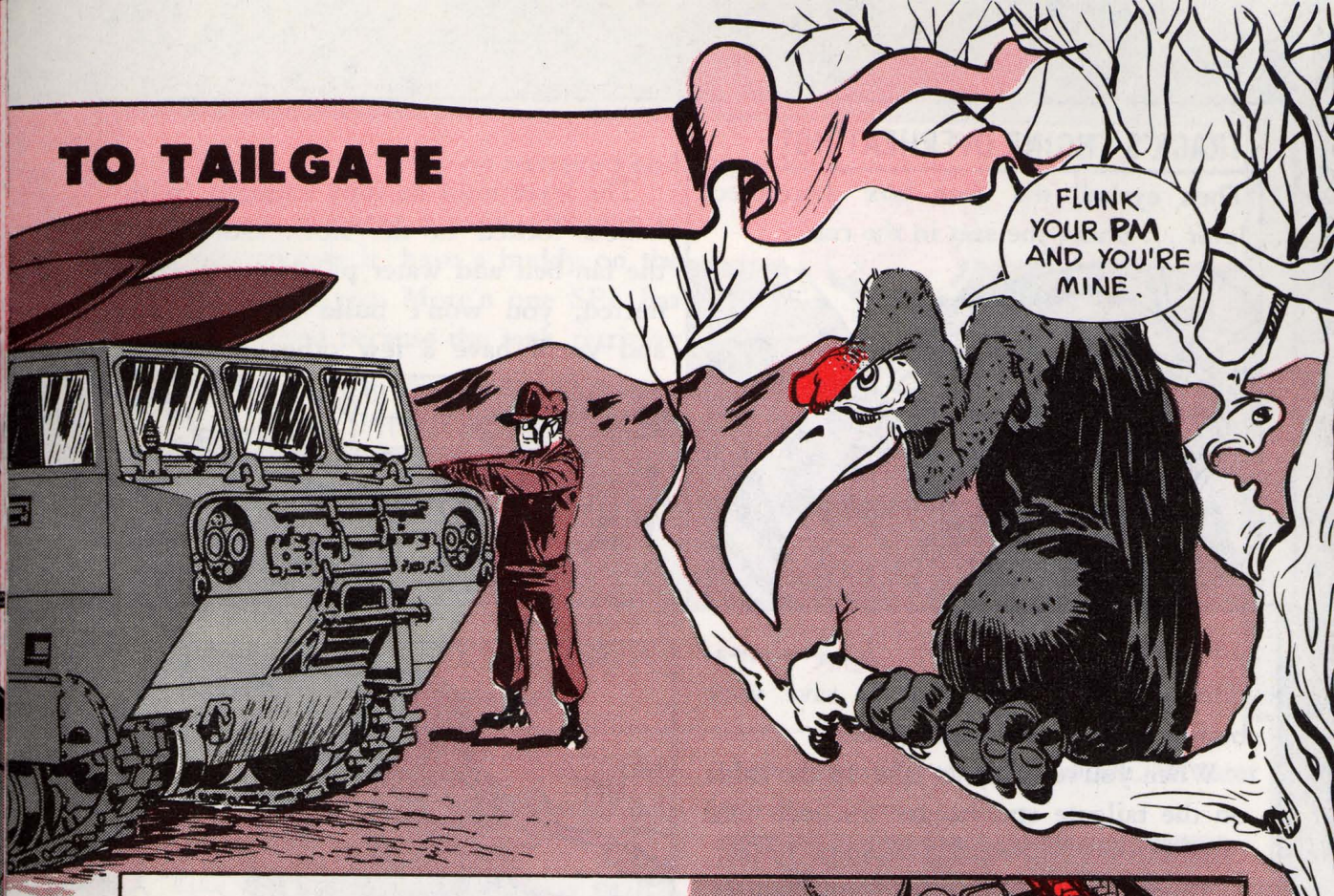
WHEN FIRING ASP (Annual Service Practice) fire over the side of the SPL. If you fire over the cab, you'll bust the windows with concussion. There's an MWO on the way for a windshield blast cover, but meanwhile, watch where you point.



CABLE HOOKUPS should be made **after** you lay the cable ... which saves damage to the equipment you're hooking to, as well as to the SPL.

PS MORE

TO TAILGATE



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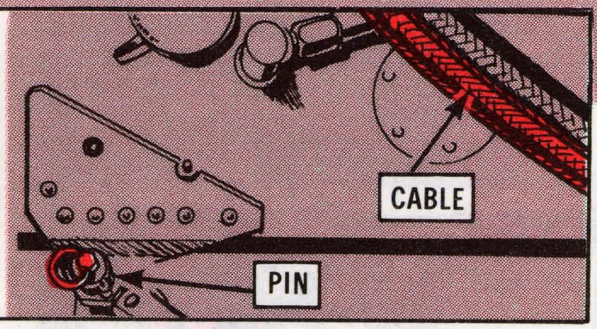

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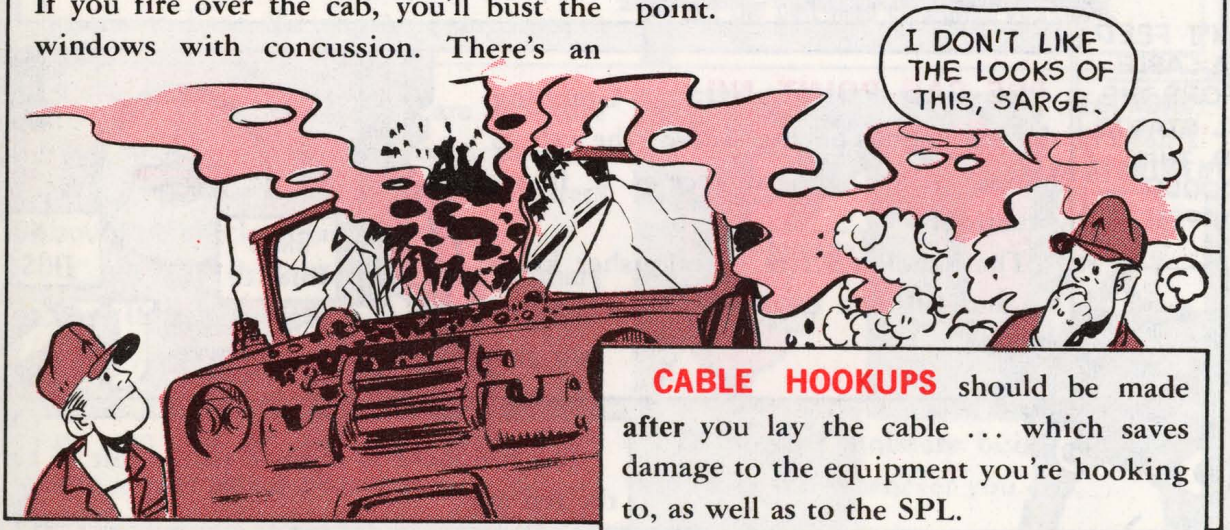

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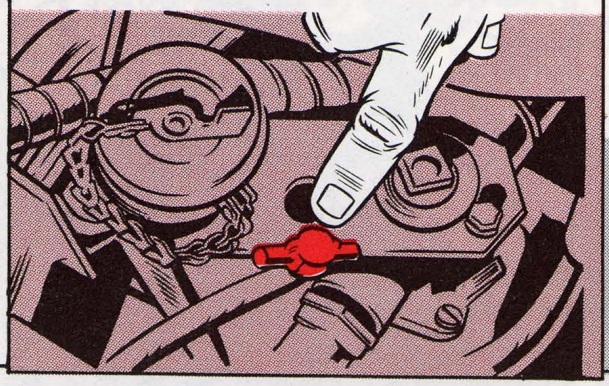
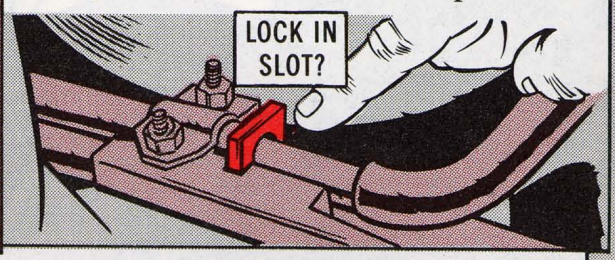
P.S MORE

TRACK'S ENGINE OVERHEATING?

Then eyeball the gear box disconnect lever . . . under the seat in the cab.



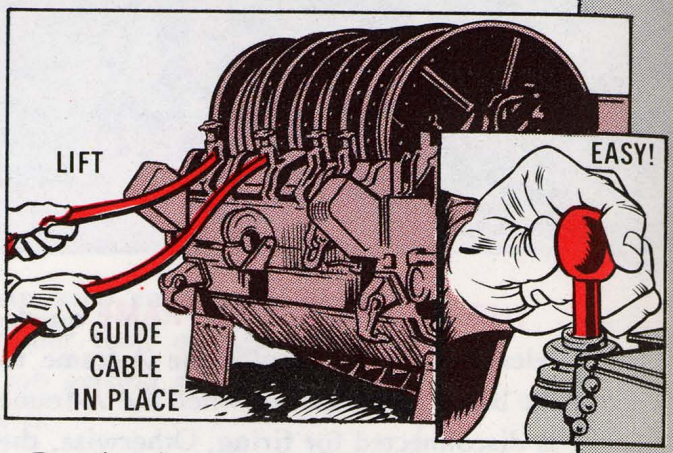
The lever must be fully engaged (with handle locked in the slot). Otherwise, the fan belt and water pump are disconnected, you won't build air pressure, and you'll have a few other problems.



CABLE RETRIEVING is a wait-a-minute deal if you want to save your buddy some bruises and breaks.

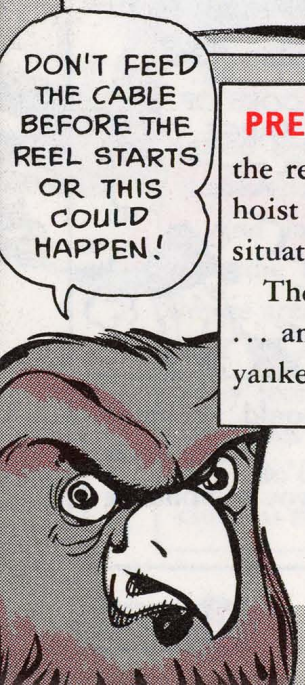
When you're ready to take up the cable on the tailgate spools, get the reels and cable started . . . first.

Then, as the cable feeds onto the spool, have your buddy hold the cable and guide it in place.



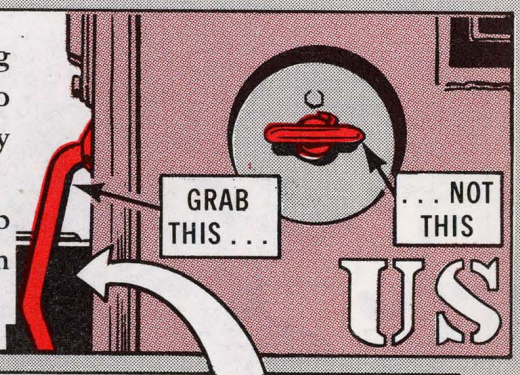
Best bet is to push the reel switch in easy-like and get the cables going, slow. Don't push the switch all the way in.

As the cables slow down from the initial start, a man can lift 'em up and feed 'em without danger.



PRE-CAB POINT NO. 1 Grabbing the red handle on the side of the cab to hoist yourself aboard creates a frosty situation.

The handle's a fire extinguisher knob . . . and fills the engine with CO_2 when yanked.



The handhold is the one to the left of the red one.

COUPLA' 3 POINTS on retrievers and towed loads:

If you're pushing a tank retriever at the SPL to tow it, have a buddy on the ground guide you. More'n one SPL has been crunched because the tank retriever operator got too close.

When you're tooling down the road with a towed load on the SPL, control the urge to pivot steer ... or the load will jackknife and spill.

'Nother point on a towed load: jumping a ditch with it will make you a 2-vehicle family. The SPL will make the ditch, but the tow is gonna stay.

EYEBALLING THE ENGINE compartment can turn up some cry-for-help areas.

Like with the oil pressure safety switch. The top is wide open, just begging for water ... from the hose you wash the vehicle with, or any other source.

Trouble is, when water settles in the switch top the unprotected generator leads which dip into the top get wet.

And, when you start the generator, it kicks out, immediately. The water, natch, makes for a dead short.

So, when you're washing the track, or otherwise have the engine compartment open to water, cover the switch. If water gets to it, dry it out.

You can prevent damage to the starter ground lead and jackshaft-to-fan drive belts by repositioning the lead away from the belts.

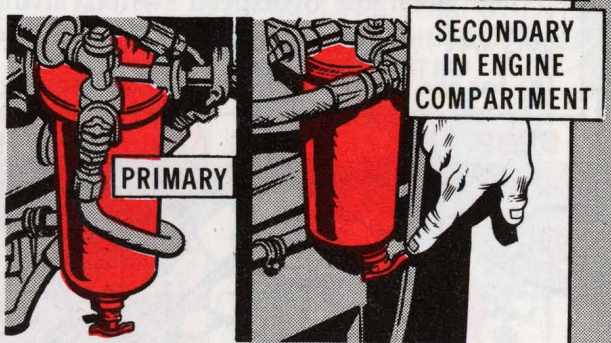
Loosen the screws securing the lead to the hull, and reposition it.

Then, start the engine to be sure you've got the belt-lead clearance you need.

THE FUEL CELL filters are moisture traps (and rightly so), and the draincocks on the primary and secondary filters should be checked daily for water.

Crack the draincock on the primary filter. If there's water in it, crack the secondary and get the water out of that, too.

If you've got moisture in the fuel cell, you can get to the cone type filters through the access plates.



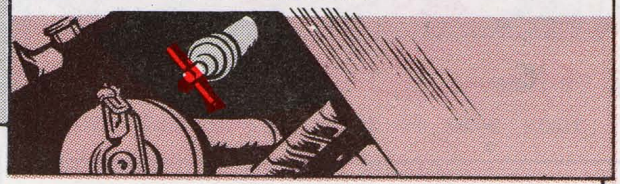
To prevent moisture build up, keep the tanks full whenever you can.

P.S MORE

ON AN OIL LEVEL check, do it with a warm engine. Same deal on the transmission check. If it's cold, you can get a full reading, which isn't necessarily so.

The same "full" reading on a cold track could be down to the "add oil" line after it warms up.

And, turn the dipstick free before pulling it out. If the dipstick isn't turned free first, it won't go all the way down when you check the oil. So, you may add oil when it's not needed.



THE HYDRAULIC CLUTCH oil level needs checking weekly during regular use. If you don't check it, and the level drops, the clutch'll burn out from overheated bearings.

To keep the level right, remove the 2 drain plugs. Pour oil in the top opening, and when it comes out the bottom, you're right.

Just don't stop pouring till it comes out the bottom.

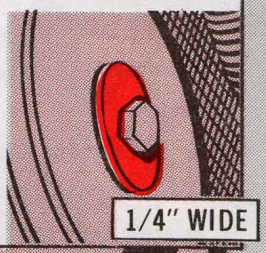
THE NO SURGE PURGE is a must with this beast, friend when you've got a motor that needs tuning. If you get gay with the foot and zap the juice to a rough running engine too quick, you'll crack the quill shaft and put the engine down.

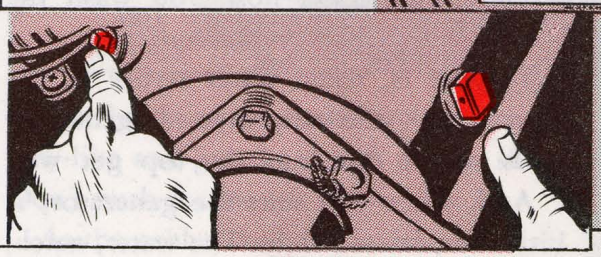
In case you haven't seen it, the original requirement of 12-15 lbs torque on the transfer step-up pulley bolt has been changed to 32-38 lbs per USATACOM engineers.

That's on the outside bolt only, so just retorque the one.

Replacement pulley bolts and washers should be in place. If not, you need FSN 5306-763-7730 for the bolt and 5310-058-7081 for the washer.

The replacement is easy to spot, since the washer is 1/4 inch wide compared to the 1/16-in width of the original.





DRIVING IN THE WRONG GEAR range burns out engines, so get familiar with the range used for your various speed and terrain conditions. Check the caution note in Ch 3 and the ranges in para 2-104 of TM 9-1450-501-10 (Nov 67).

The generator overspeed switch, at the left rear of the engine, shorts out when it gets wet ... so protect it from water during washing, etc. And don't overlook some oil for the switch when you lube the engine attachments.

DROP THE LEVELING ARMS before you try to lock down the launcher.

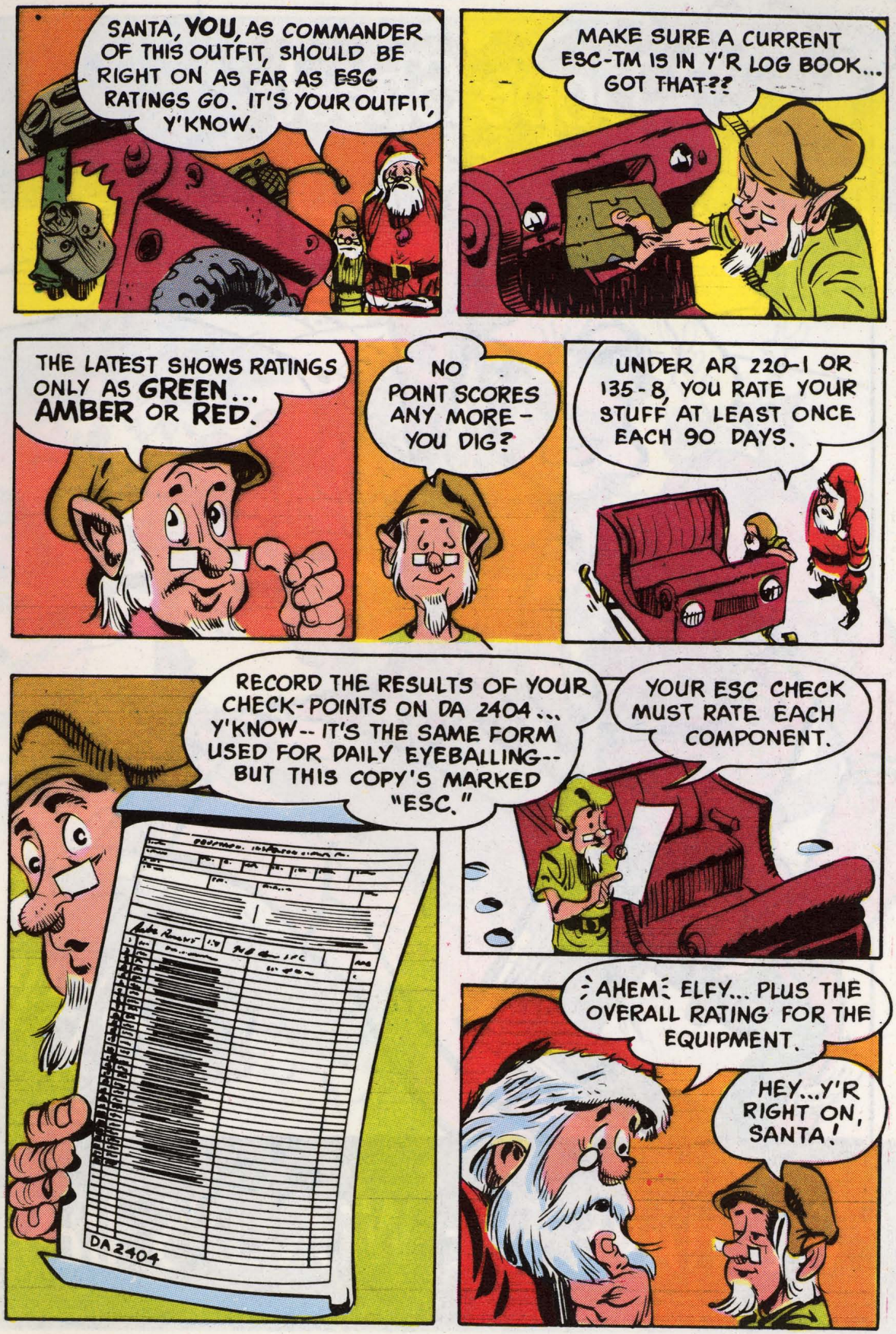
If you don't drop the arms, you'll break the pins on the launcher locking handle.

In a bind for the preformed packing in the linear actuating cylinder assembly? Preformed packing FSN 5330-579-8157 listed in TM 9-1440-517-25P will do the job for you. (It has 2 applications.)

PS END

* EQUIPMENT SERVICEABILITY CRITERIA... NOT EXCEPTIONAL SANTA CLAUS.

WOT IN GREAT KING WEN-SEN-LOUSE ARE YOU LIPPIN' OFF A-BOUT?
ESC... SANTA BABY... EQUIPMENT SERVICEABILITY MAN...LIKE WHEN YOU GOTTA GO...YOU KNOW IT FOR SURE...YOU DIG?
HEAVENS TO HOLLY BUNK ...THE NOW GENERATION HAS ARRIVED HERE!
...ER WHO CHECKS THIS ESC, ELFY ?
EASY! THE OPERATOR OR CREW WHEN THE EQUIPMENT IS ASSIGNED TO THEM.
IF THE EQUIPMENT'S IN SHOP OR IN STORAGE THE CO ASSIGNS SOMEONE TO DO IT...
...THE ESC RATING IS STILL A JOB FOR THE UNIT.
IN YOUR LOG-BOOK THERE IS A ESC-TM.
SUCH AS—
TM 9-2320-209 ESC
THIS ESC-TM IS THE ROCK BOTTOM CHECKLIST OF WHAT'S NEEDED ON YOUR EQUIPMENT TO DO ITS PRIMARY JOB...
...AND TO MAKE SURE IT'LL OPERATE FOR AT LEAST 90 DAYS WITH ONLY NORMAL PM.
?
I SEE YOU ARE A LITTLE CONFUSED. I SHALL ENLIGHTEN YOU.

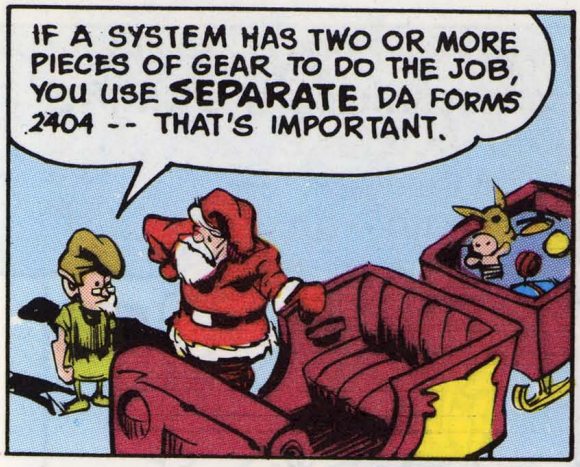

SANTA, YOU, AS COMMANDER OF THIS OUTFIT, SHOULD BE RIGHT ON AS FAR AS ESC RATINGS GO. IT'S YOUR OUTFIT, Y'KNOW.
MAKE SURE A CURRENT ESC-TM IS IN Y'R LOG BOOK... GOT THAT??
THE LATEST SHOWS RATINGS ONLY AS GREEN... AMBER OR RED.
NO POINT SCORES ANY MORE - YOU DIG?
UNDER AR 220-1 OR 135-8, YOU RATE YOUR STUFF AT LEAST ONCE EACH 90 DAYS.
RECORD THE RESULTS OF YOUR CHECK-POINTS ON DA 2404... Y'KNOW-- IT'S THE SAME FORM USED FOR DAILY EYEBALLING-- BUT THIS COPY'S MARKED "ESC."
DA 2404
YOUR ESC CHECK MUST RATE EACH COMPONENT.
:AHEM: ELFY... PLUS THE OVERALL RATING FOR THE EQUIPMENT.
HEY...Y'R RIGHT ON, SANTA!

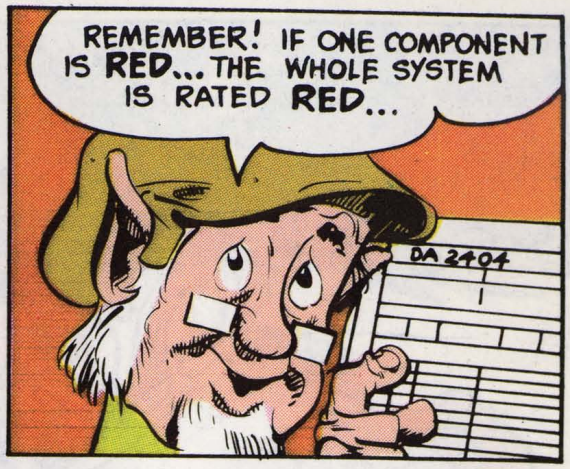
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR B

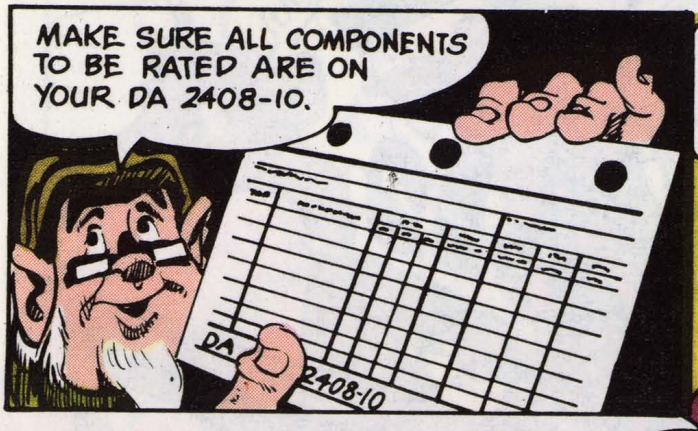
IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

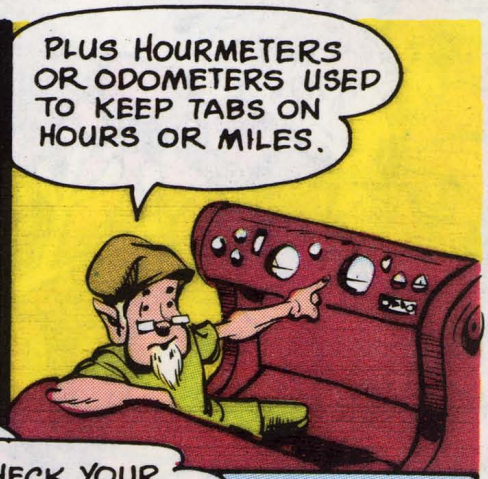
QUIPMENT ...*Take care of it*

ULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

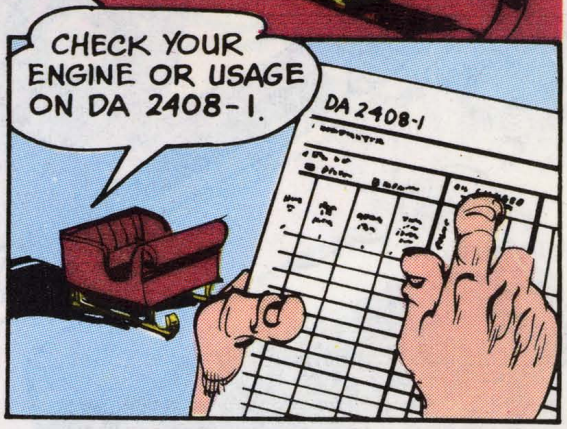

IF A SYSTEM HAS TWO OR MORE PIECES OF GEAR TO DO THE JOB, YOU USE SEPARATE DA FORMS 2404 -- THAT'S IMPORTANT.

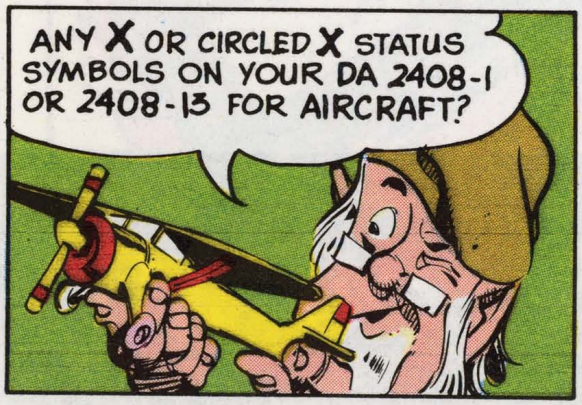

REMEMBER! IF ONE COMPONENT IS RED... THE WHOLE SYSTEM IS RATED RED...
DA 2404


MAKE SURE ALL COMPONENTS TO BE RATED ARE ON YOUR DA 2408-10.
DA 2408-10

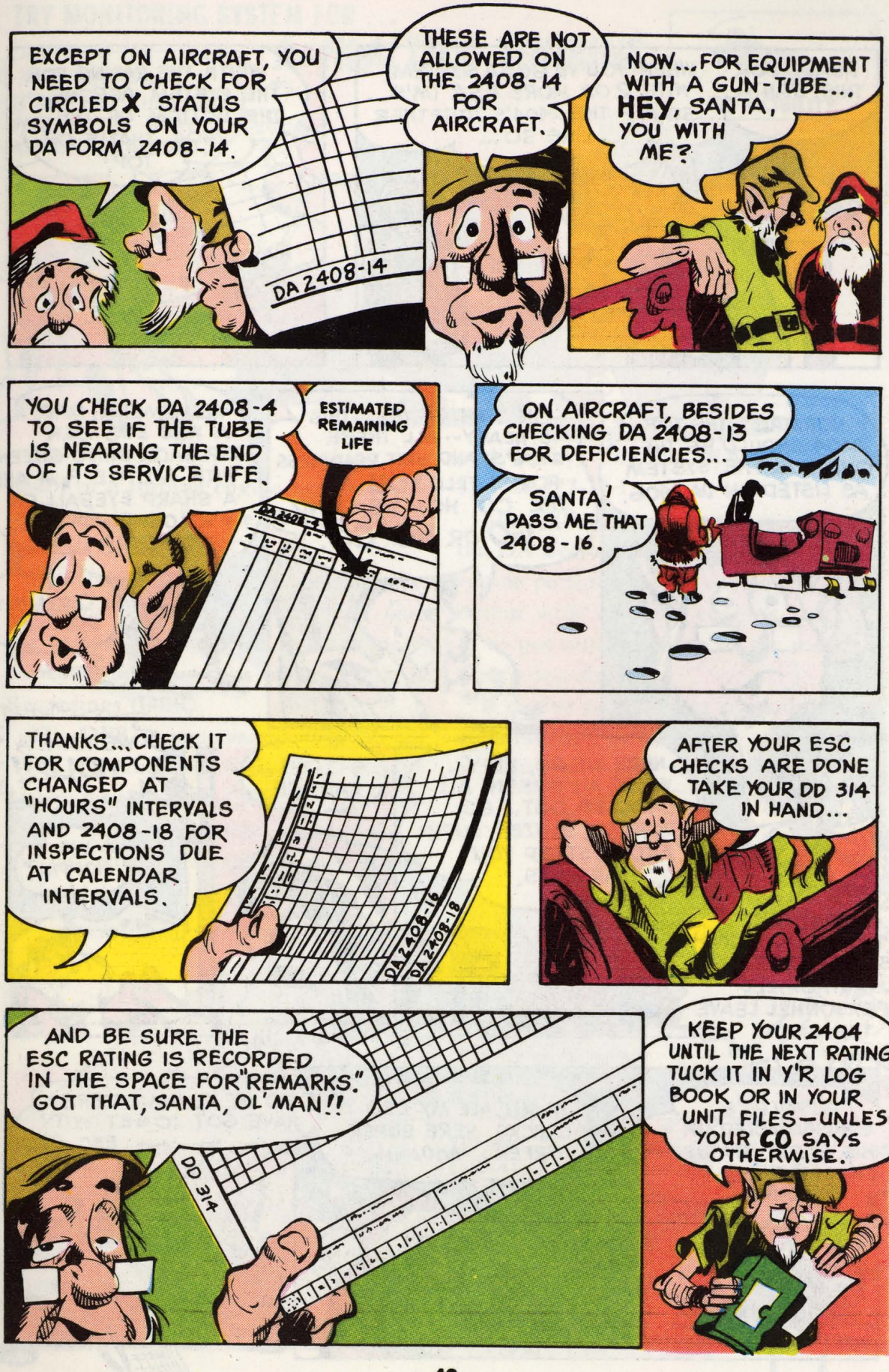

PLUS HOURMETERS OR ODOMETERS USED TO KEEP TABS ON HOURS OR MILES.

EYE-BALLING DA 2408-5'S IS A MUST! AN URGENT MWO NOT APPLIED ZAPS YOU INTO THE RED
POW
OH!


CHECK YOUR ENGINE OR USAGE ON DA 2408-1.
DA 2408-1


ANY X OR CIRCLED X STATUS SYMBOLS ON YOUR DA 2408-1 OR 2408-13 FOR AIRCRAFT?

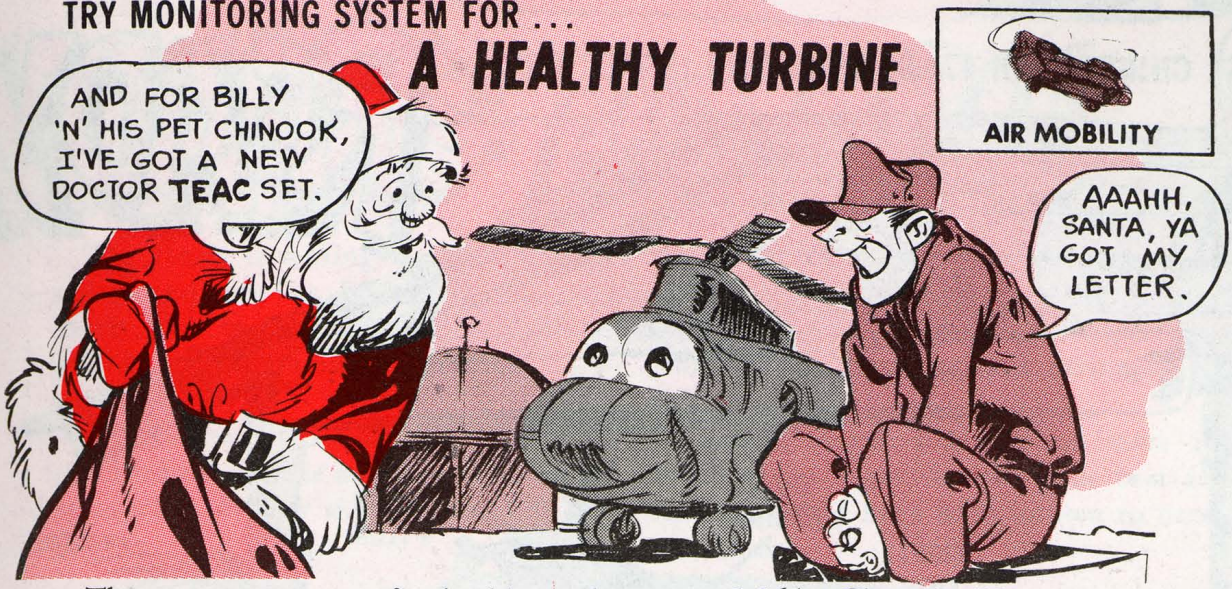
IF SO, THAT MAKES YOUR EQUIPMENT RED.


EXCEPT ON AIRCRAFT, YOU NEED TO CHECK FOR CIRCLED X STATUS SYMBOLS ON YOUR DA FORM 2408-14.
DA 2408-14
THESE ARE NOT ALLOWED ON THE 2408-14 FOR AIRCRAFT.
NOW... FOR EQUIPMENT WITH A GUN-TUBE... HEY, SANTA, YOU WITH ME?
YOU CHECK DA 2408-4 TO SEE IF THE TUBE IS NEARING THE END OF ITS SERVICE LIFE.
ESTIMATED REMAINING LIFE
DA 2408-4
ON AIRCRAFT, BESIDES CHECKING DA 2408-13 FOR DEFICIENCIES...
SANTA! PASS ME THAT 2408-16.
THANKS... CHECK IT FOR COMPONENTS CHANGED AT "HOURS" INTERVALS AND 2408-18 FOR INSPECTIONS DUE AT CALENDAR INTERVALS.
DA 2408-16
DA 2408-18
AFTER YOUR ESC CHECKS ARE DONE TAKE YOUR DD 314 IN HAND...
AND BE SURE THE ESC RATING IS RECORDED IN THE SPACE FOR "REMARKS." GOT THAT, SANTA, OL' MAN!!
DD 314
KEEP YOUR 2404 UNTIL THE NEXT RATING. TUCK IT IN Y'R LOG BOOK OR IN YOUR UNIT FILES—UNLESS YOUR CO SAYS OTHERWISE.

READY FOR THIS, SANTA...
WHEN YOU'VE GOT A SYSTEM WITH 2 OR MORE ESC TM'S... STAPLE THE 2404'S TOGETHER ...LIKE SO...
CLICK
WRITE THE RATING FOR THE SYSTEM ACROSS THE BOTTOM OF THE 2404 THAT'S ON TOP!
DA 2404
NORMALLY, THE TOP 2404 SHOULD BE THE ONE FOR THE SYSTEM AS LISTED ON DA 2406.
OK, SANTA BABY... THIS IS HEAVY--ALL THESE 2406'S AND UNIT READINESS FORMS TELL YOU AS THE CO HOW WE STAND —GO OR NO GO.
REMEMBER, DAD, A RED ESC CAN ZIP BACK UP TO GREEN WITH A LITTLE P&M AND A SHARP EYEBALL ON Y'R LOG RECORDS... YOU DIG?
I CERTAINLY DO, ELFY.
ATTENTION! PREPARE TO LAUNCH SANTA-CRAFT... ALL UNAUTHORIZED PERSONNEL LEAVE THE AREA.
HERE WE GO, ELFY... WE'RE ALL GREEN ALL CHECKED OUT...GO, DONNER, BLITZEN, CUPID AND REST OF YOU VARMINTS.
4-3-2-1... LAUNCH
WE HAVE A HOLD!!
WA HOPPIN?
RUDOLPH'S SINUSES ACTED UP. HIS FLIGHT STATUS IS CANCELED AND SO IS YOURS.
B-BUT ALL MY ESC CHECKS WERE SUPER-GREEN... MOOANNN...
SO WE COMMANDERS HAVE GOT TO GET WITH ESC, EH, ELFY?

TRY MONITORING SYSTEM FOR ...

A HEALTHY TURBINE



The newest way of checking the health of a turbine engine has made the scene, birdmen. It's the Turbine Engine Analysis Check (TEAC).

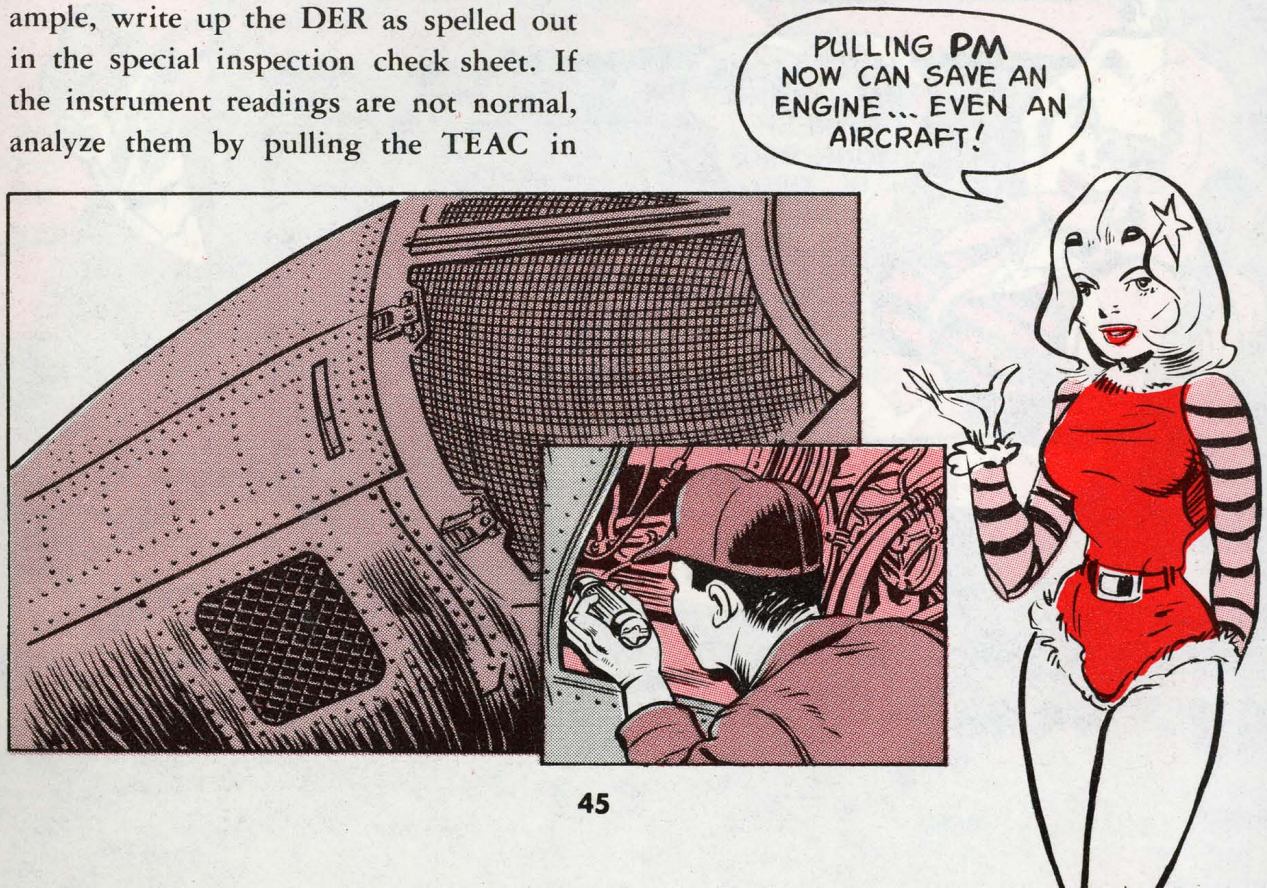
Pull the TEAC on a new engine, after replacement of a major component, during periodic maintenance, and when it's indicated by the results of Daily Engine Recordings (DER).

The DER is your monitoring system.

On the Chinook (CH-47B,C) for example, write up the DER as spelled out in the special inspection check sheet. If the instrument readings are not normal, analyze them by pulling the TEAC in para 5-26A, Chg 12 (May 71) to TM 55-1520-227-20-1.

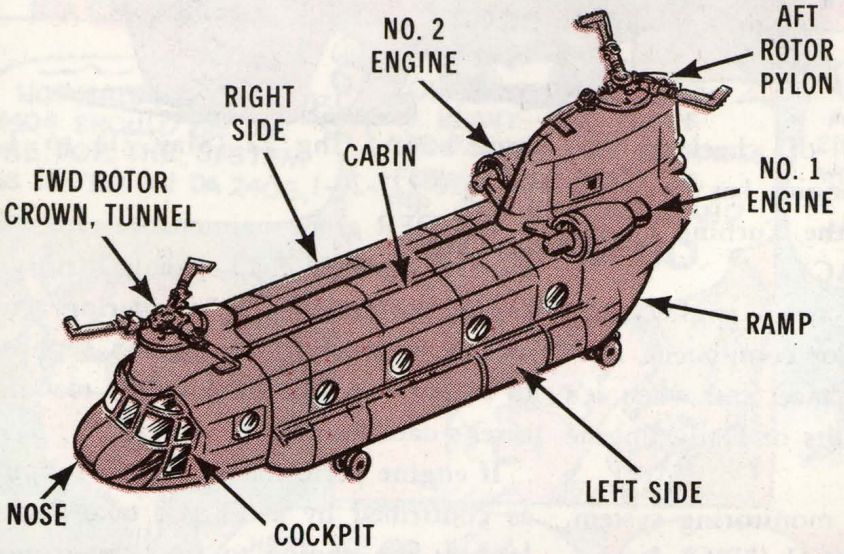
The DER gives maintenance types, via the DA Form 2408-13, a daily history of engine performance by comparing actual output with what the engine's supposed to to put out according to the manufacturer's data sheet.

If engine performance starts dropping, as confirmed by a TEAC, take a close look at the engine to find the trouble.



CHINOOK (CH-47) BE YOUR OWN INSPECTOR . . .

READY.



HOW ABOUT A LITTLE RUNDOWN, CONNIE?

HERE'S SOME **PM** POINTERS TO KEEP YOUR BIRD IN THE PINK!

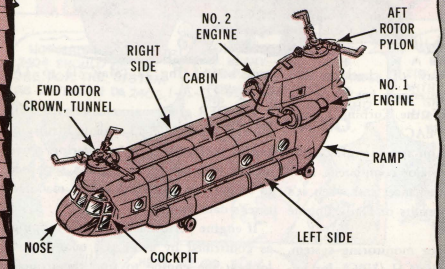
CHINOOK (CH-47) BE YOUR OWN INSPECTOR . . .

READY, WILLING AND ABLE

The Hook is willing and able to tote troops and supplies. It's up to you crew-chiefs, tho, to make sure she's ready by pulling a numbah-one Preventive Maintenance Daily.

Equipment on board may vary from one bird to another and from one model to another. Follow the TM 55-1520-209-20PMD checksheets for the A Model and TM 55-1520-227-20PMD for the B and C Models, backed up by the inspection poop in the organizational maintenance pub.

Gather 'round, 67U types. Items in **BOLD RED** type deserve your best effort since they have been known to need attention.



HERE'S SOME PM POINTERS TO KEEP YOUR BIRD IN THE PINK!

HOW ABOUT A LITTLE RUNDOWN, CONNIE?

REARVIEW MIRROR AND BOOM—(If installed)—damaged? Secure?

RIGHT, LEFT DOOR JETTISON HANDLE—Closed? Locked? Make sure the upper and lower latches inside the bird are engaged.

LOG BOOK LOOKS A-OK.

NOSE SECTION

WHEN YOU TAKE OUT JETTISONABLE DOORS, REINSTALL THEM EXACTLY LIKE THE MANUAL SAYS, OR YOU'LL LOSE 'EM IN FLIGHT.

LOG BOOK—Eye the forms for recorded faults.

PS MORE

WILLING AND ABLE

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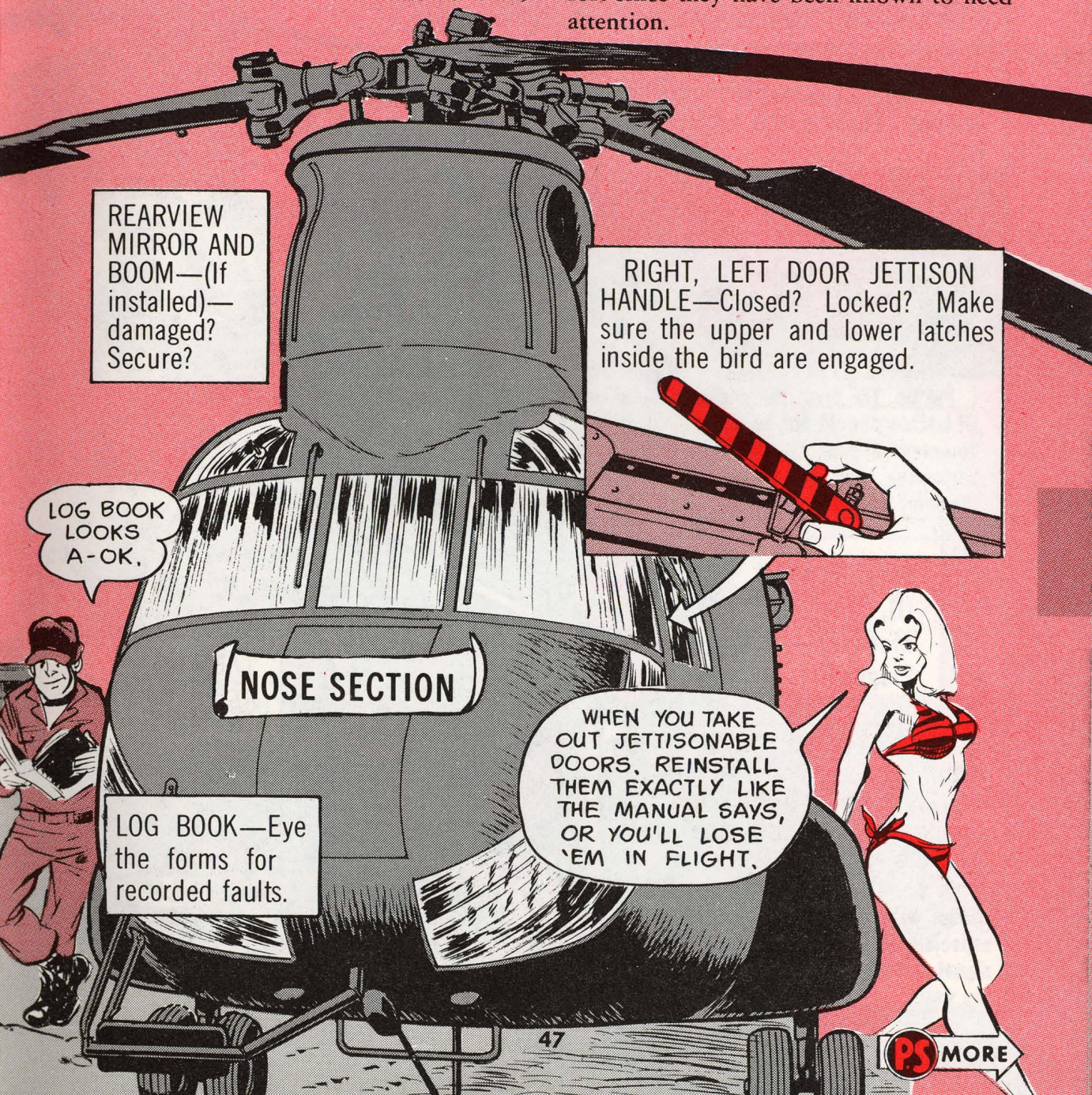
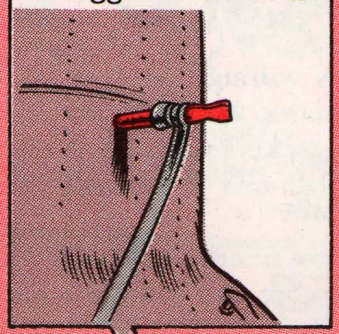


P.S MORE

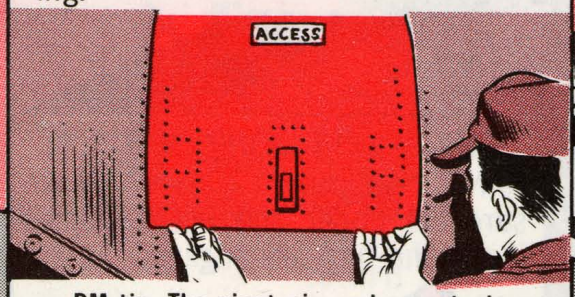
WINDSHIELD, WINDOWS— Transparent plastic nicked, scratched or discolored? Defects are only allowed in the non-critical border areas so eye Chap 4 of the maintenance pub for the limits.

PM tip. You no longer have to use toothpaste to polish out scratches in transparent plastic. It never really did a perfect job and was an all-day affair, in the bargain. Instead, ask supply for—Indosil 21, FSN 7930-634-5340, or equivalent. With it you can polish out scratches in short order.

PITOT TUBE— Plugged with dirt?

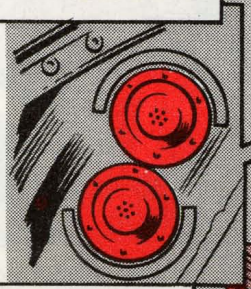


ACCESS PANEL—Eye the panel for damage, closure and positive locking.



PM tip. The pivot pin and receptacle on all latches should not be excessively worn. You want a snug fit. Nothin's more embarrassing than having a panel sail into the rotor blades!!

SAS PORTS (B, C Models)— Plugged?



LANDING - SEARCHLIGHTS— Damaged?

ANTENNAS, SUPPORTS — Damaged? Secure? Make an entry on the DA Form 2408-13 for faulty equipment, even tho you correct it on the spot.

PM tip. The FM antenna coupling can collect water during the rainy season and especially after a wash job. To keep a strong signal, loosen the drain plug and release the water.

WINDSHIELD, WINDOWS—Transparent plastic nicked, scratched or discolored? Defects are only allowed in the non-critical border areas so eye Chap 4 of the maintenance pub for the limits.

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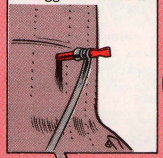

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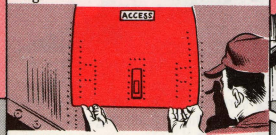

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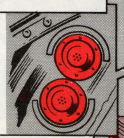

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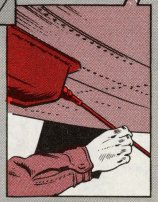
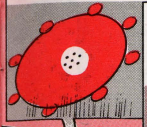


LANDING - SEARCHLIGHTS—Damaged?

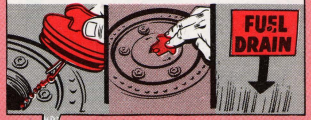
LEFT SIDE

STATIC PORTS—Plugged with dirt?



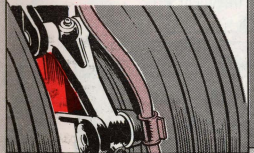
NAVIGATION, ANTI - COLLISION LIGHTS—Covers cracked? Dirty?

FUEL TANK—Vents and sump drains clear? Tank serviced? Filler cap on tight and seated? Drain fuel into a clean, dry sample bottle. Use detection kit, aviation, fuel, FSN 6640-892-2264, to check for water in the fuel.



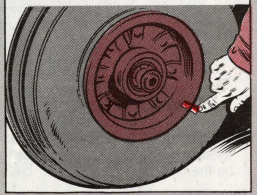
ANTENNAS, SUPPORTS—Secure? Undamaged?

FORWARD LANDING GEAR SHOCK STRUT—Eye the strut for leakage, damage and normal extension.



FORWARD WHEEL BRAKE—leaks?

FORWARD LANDING GEAR TIRES—Eyeball the tires for proper inflation, cuts, blisters, wear. Slippage marks aline?



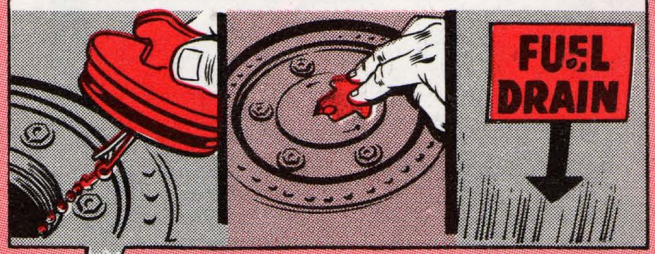
PS MORE

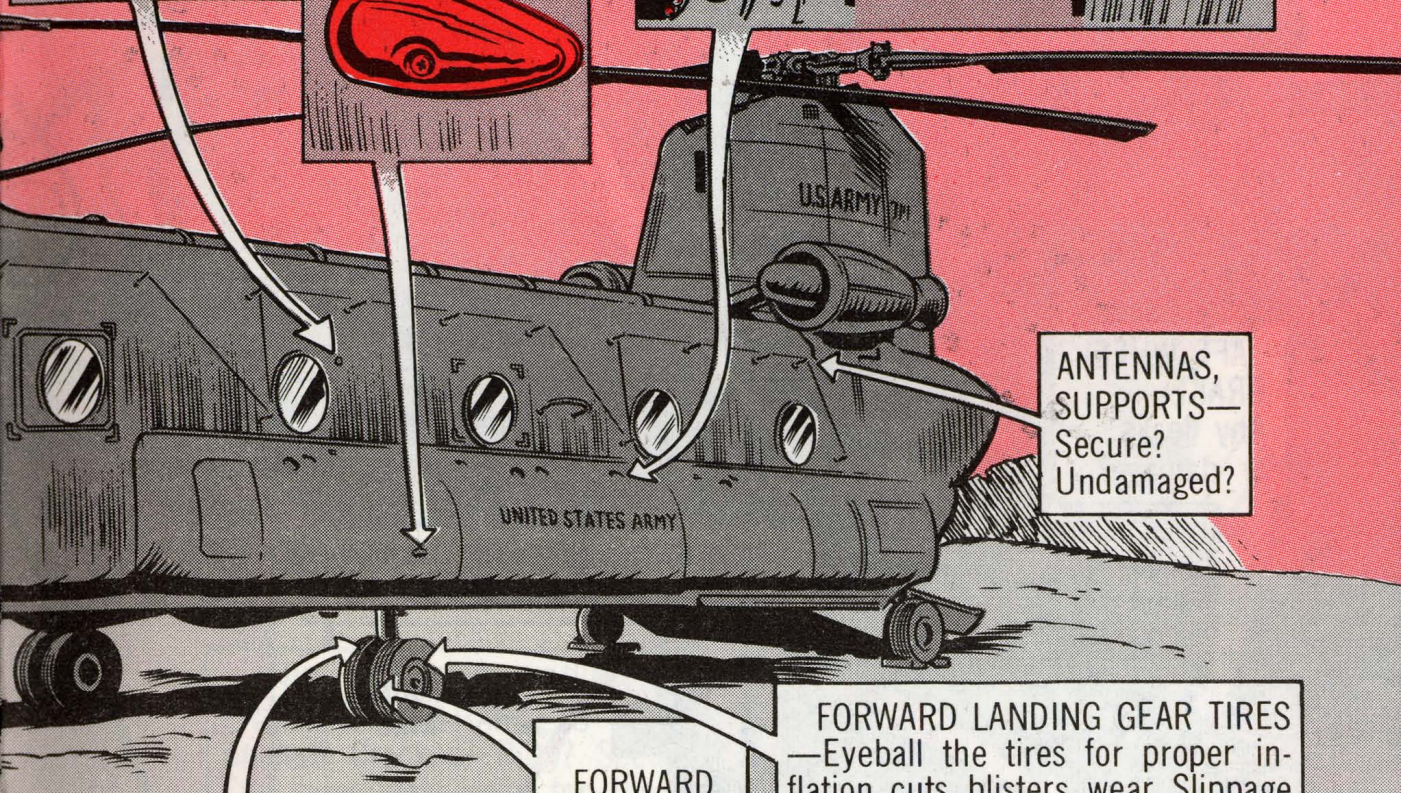
LEFT SIDE

STATIC PORTS—Plugged with dirt?

NAVIGATION, ANTI - COLLISION LIGHTS—Covers cracked? Dirty?

FUEL TANK—Vents and sump drains clear? Tank serviced? Filler cap on tight and seated? Drain fuel into a clean, dry sample bottle. Use detection kit, aviation, fuel, FSN 6640-892-2264, to check for water in the fuel.





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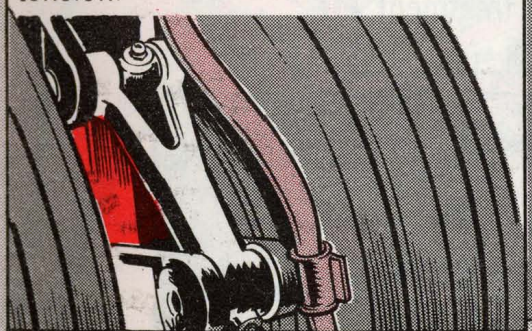

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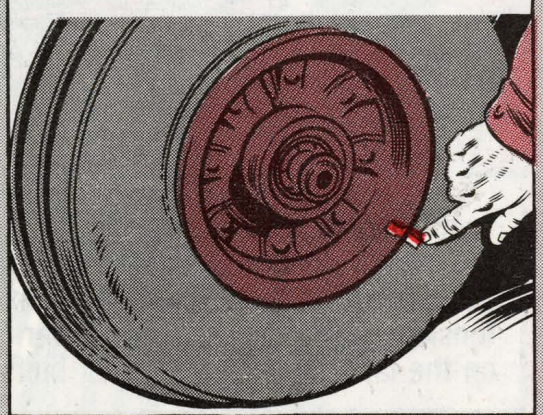
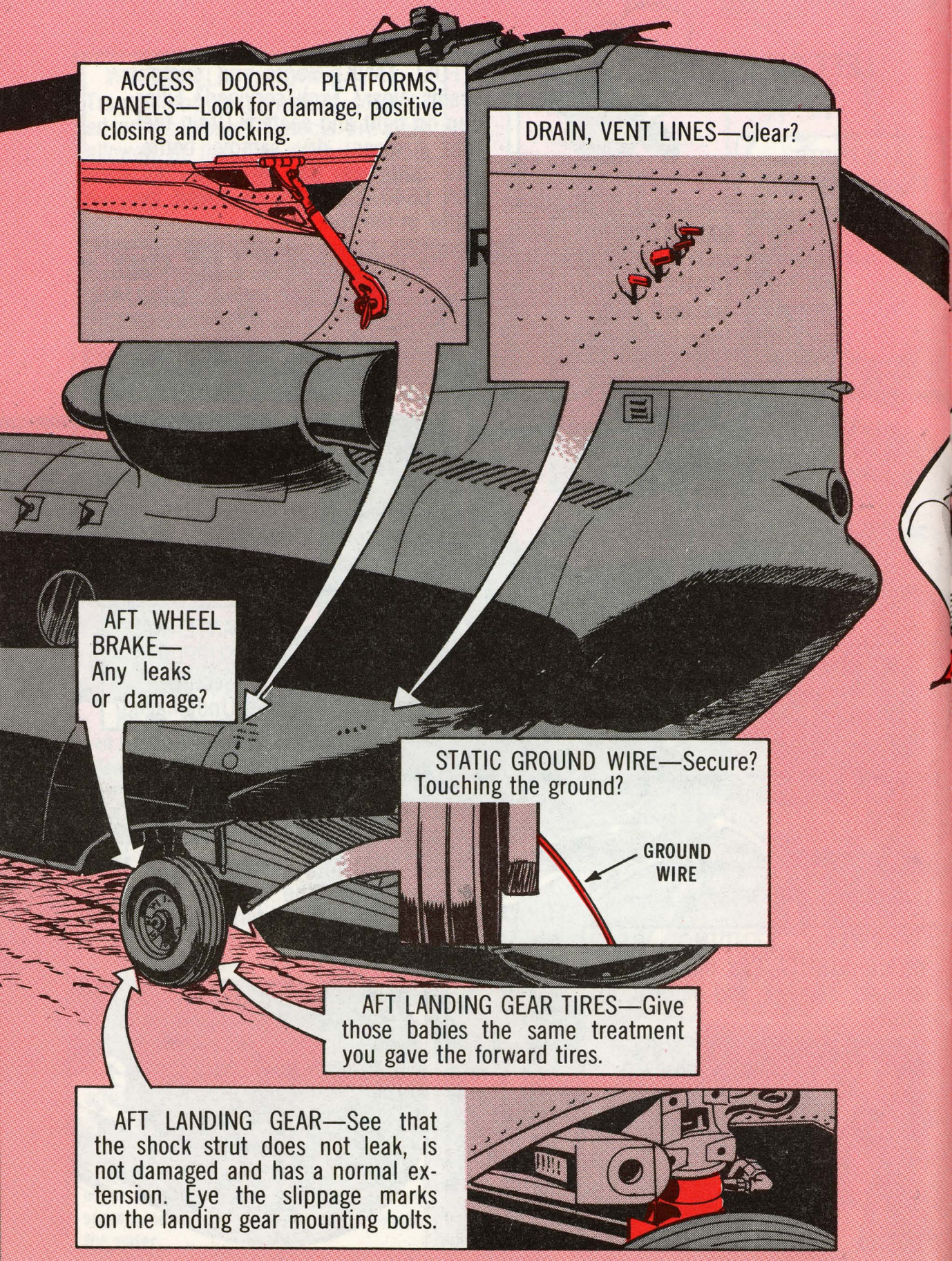


PS MORE


ACCESS DOORS, PLATFORMS, PANELS—Look for damage, positive closing and locking.
DRAIN, VENT LINES—Clear?
AFT WHEEL BRAKE—Any leaks or damage?
STATIC GROUND WIRE—Secure? Touching the ground?
GROUND WIRE
AFT LANDING GEAR TIRES—Give those babies the same treatment you gave the forward tires.
AFT LANDING GEAR—See that the shock strut does not leak, is not damaged and has a normal extension. Eye the slippage marks on the landing gear mounting bolts.

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NOW LET'S LOOK AT POWER PLANT NO.1.

NO. 1 ENGINE

ENGINE ACCESSORIES (lower side)—Look for leakage.

ENGINE OIL TANK—The oil level should read FULL. Never overfill the tank because the combustion chamber drain valve and bleed valve will leak oil. Leave room for oil expansion. If the engine hasn't been run for 24 hours it should be cranked up before the oil level is checked. Otherwise, you'll get a false reading.

CHIP DETECTOR WIRING AND ENGINE WIRING HARNESS—Broken? Chafed? Cracked? Dirty? Secured? The same deal goes for the fire detection wiring and sensing elements.

I FOUND A LEAK.

LINES, HOSES—Give hydraulic, anti-icing, fuel and oil lines the onceover for chafing, security and leaks.

PS MORE

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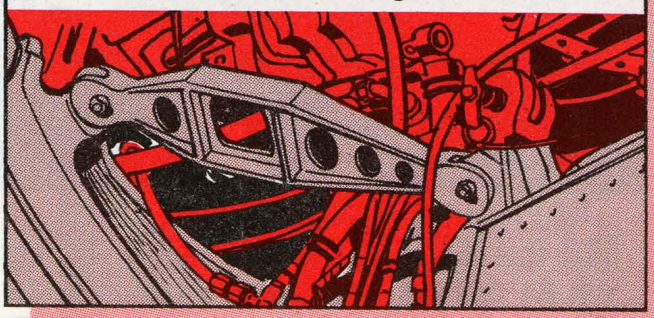

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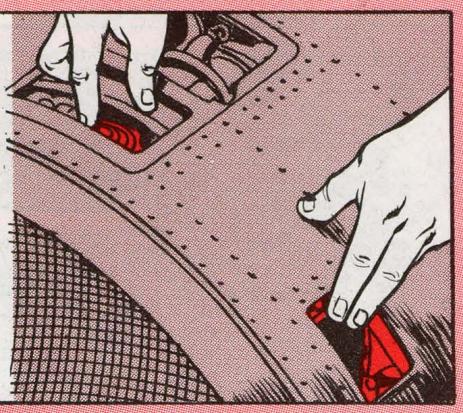

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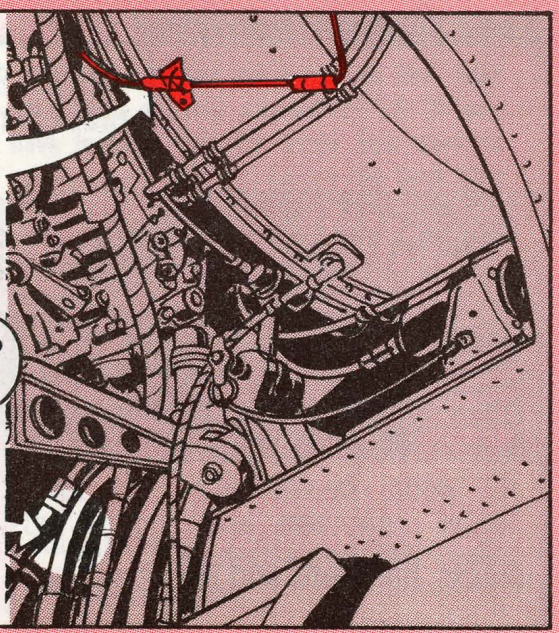

PS MORE

ENGINE TRANSMISSION COWLING, HOT AIR TRANSFER TUBE—Damaged? Hardware tight?

COWLING—Closed and locked?

INLET GUIDE VANES, COMPRESSOR BLADES, STATOR VANE—Eye 'em for damage and foreign material.

INLET HOUSING, AIR DUCTS—Look for oil streaks, foreign object damage and foreign material.

ENGINE ACCESSORIES (top side)—Any leaks?

TAILPIPE—Any cracks? Focus on the inside, next to the mounting flange ring.

INLET SCREEN—Clean and secure? Cracks or other damage?

EXHAUST DIFFUSER, INNER CONE, POWER TURBINE—Look for cracks, hot spots, and burn damage.

EYE NUMBER TWO ENGINE THE WAY YOU INSPECTED NUMBER ONE.

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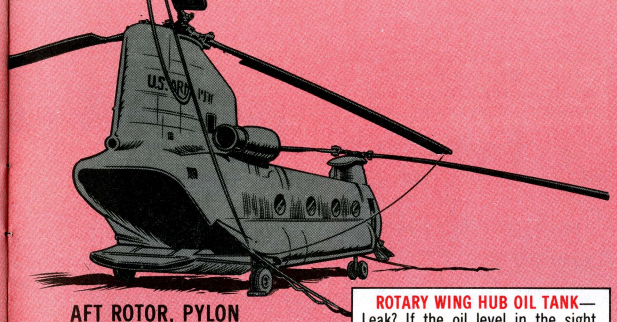
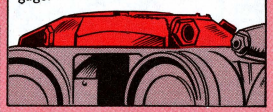


AFT ROTOR, PYLON

PITCH - VARYING HOUSING—Leaks?

ROTARY WING HUB OIL TANK—Leak? If the oil level in the sight gage is below half-full add oil to bring it up to midway on the sight gage.



The oil level should be midway on the sight gage. Eye the housing for cracks, focusing on the flanged bushing and leaf spring (A Model), pitch lock pin hole and the horizontal area from the pitch lock pin hole outboard to the inboard end of the housing on the trailing surface. All the inspection areas are shown in Chap 8 of the maintenance pub.

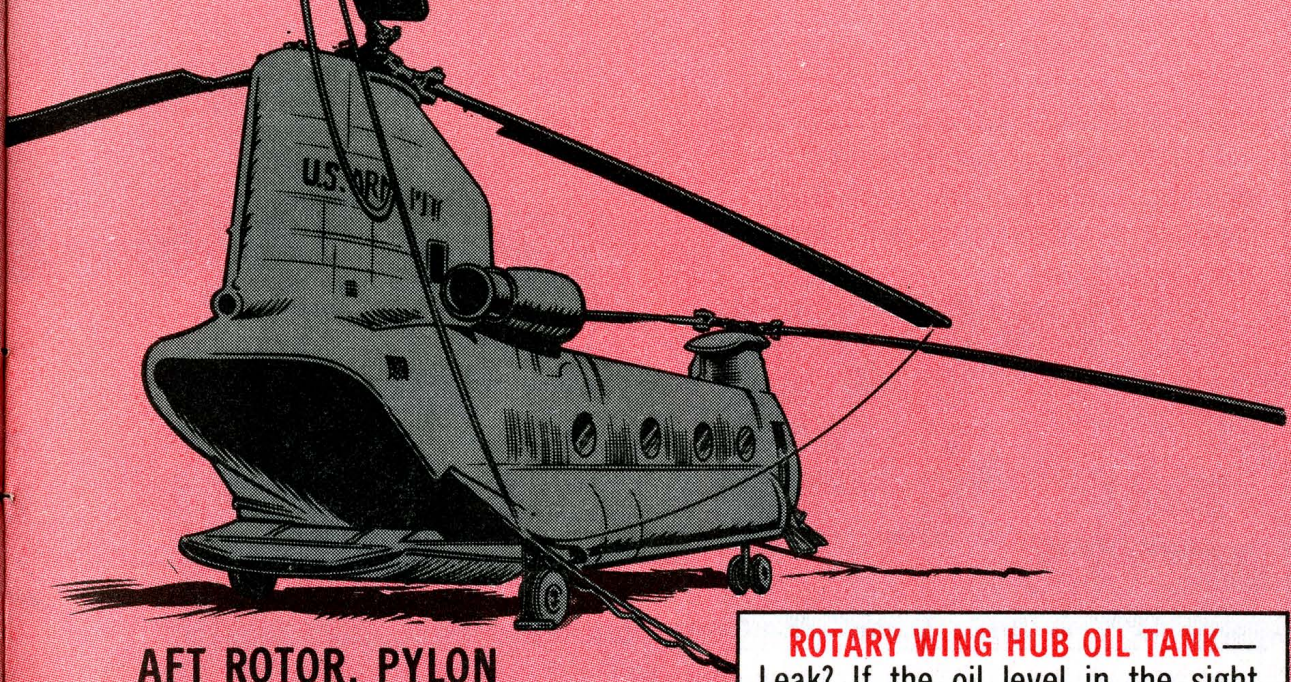
VERTICAL HINGE PIN OIL TANKS—Oil level OK? Both sight gages should show half-full. Any oil leaking?

PM tip. All the oil tanks on the rotor head hold a small amount of oil. If you have leakage thru the seals you want to get the seals changed before the tank runs dry.

When the oil level in the sight gage drops from the half-way level to the bottom of the gage after 2 hours of rotary-wing operation, it's too much ... change the seals.

SHOCK ABSORBERS—Hydraulic fluid level OK? Oil should show to the upper level line. Any leaks? B and C Models—eye the bull's eye sight gages.

PS MORE



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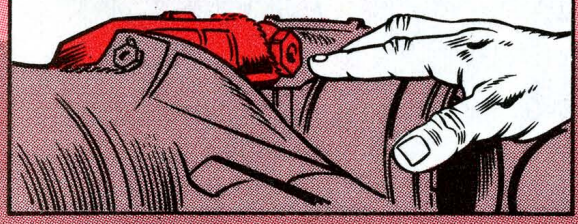

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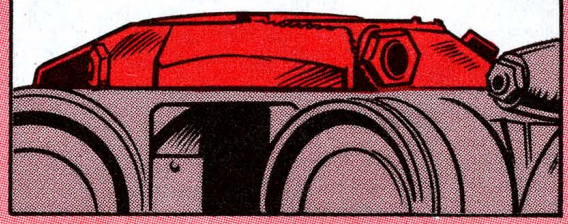

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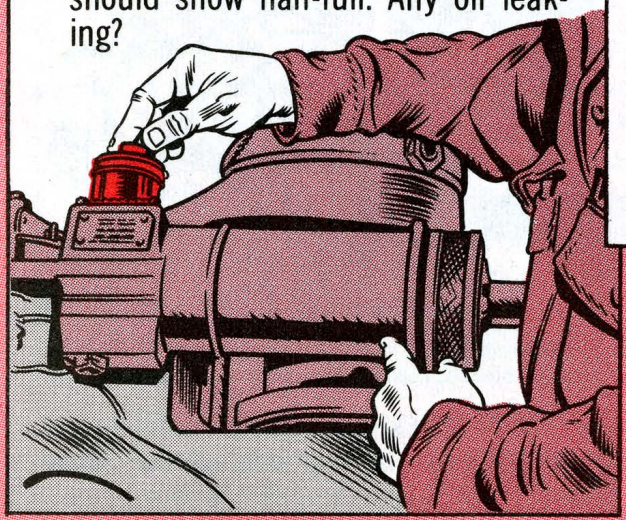

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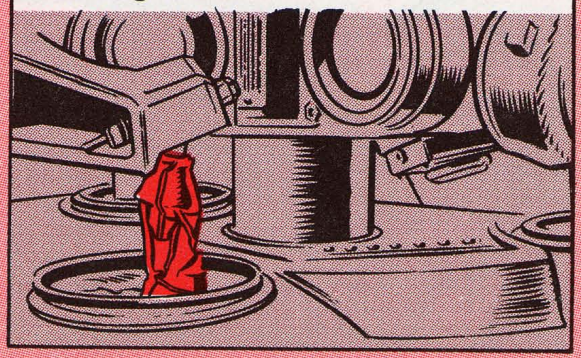
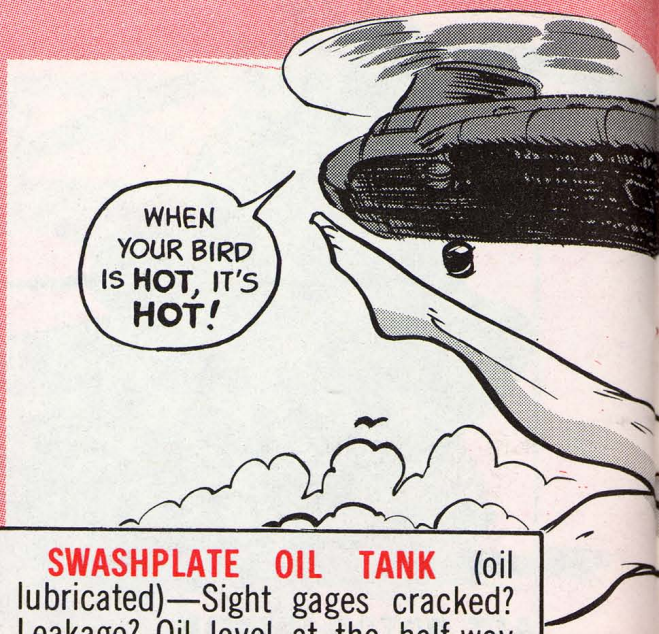
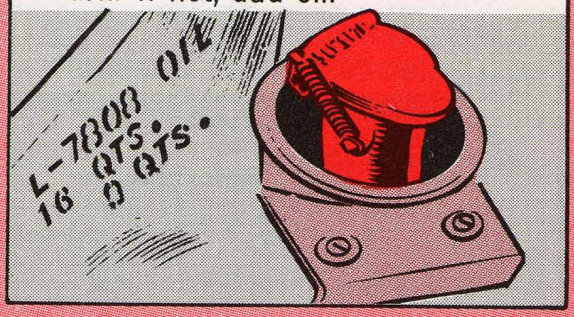
P.S MORE

PITCH LINKS—Eye the links for chafing, security, damage and unbonding of the upper and lower bearing liners.

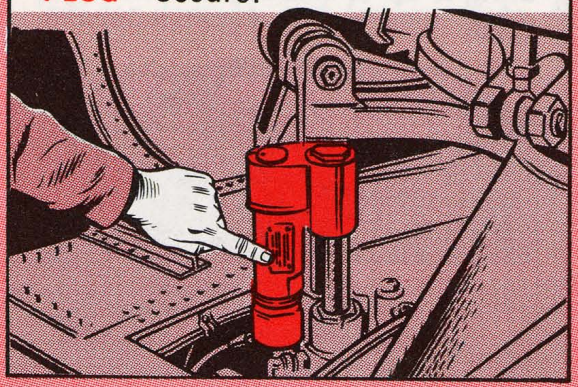




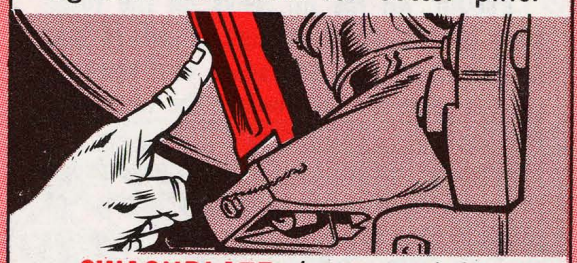
SWASHPLATE OIL TANK (oil lubricated)—Sight gages cracked? Leakage? Oil level at the half-way mark? If not, add oil.



LONGITUDINAL CYCLIC TRIM ACTUATOR AND CONNECTOR PLUG—Secure?

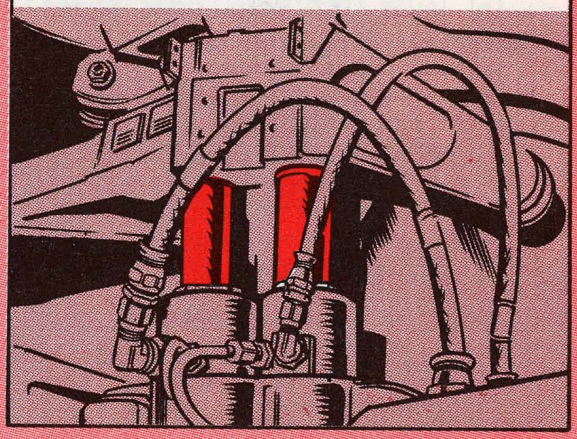


UPPER, LOWER DRIVE ARMS, COLLAR—Look for cracks and other damage. Check for security by eyeing nuts and bolts for cotter pins.



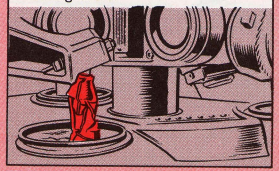
SWASHPLATE (grease lubrication)—Look for discoloration of the rotating housing which would mean overheating. Eye the tank for cracked sight gages.

PIVOTING ACTUATOR, SUPPORT—Look for actuator leakage and check the hardware for security. Eye the support for cracks and loose or missing rivets.

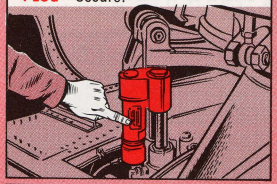


On birds prior to 64-13132 that don't have MWO 55-1520-209-40/9 incorporated, be sure you eye the drag angle, P/N 114S4117-57, on the top side of the thrust deck. The same goes for drag angle, P/N 114S4117-55, below the thrust deck.

PITCH LINKS—Eye the links for chafing, security, damage and unbonding of the upper and lower bearing liners.



LONGITUDINAL CYCLIC TRIM ACTUATOR AND CONNECTOR PLUG—Secure?



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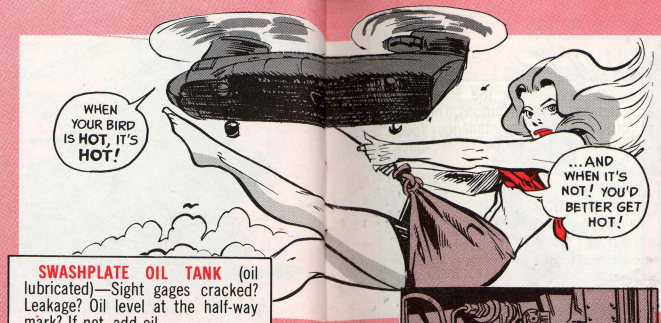

SWASHPLATE OIL TANK (oil lubricated)—Sight gages cracked? Leakage? Oil level at the half-way mark? If not, add oil.

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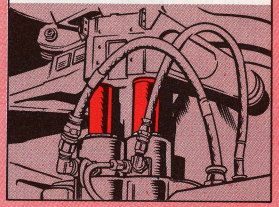

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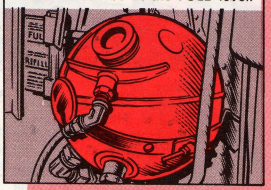
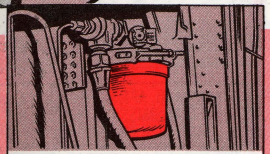
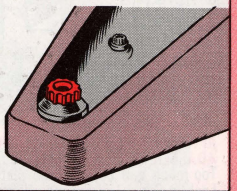




NO. 1 FLIGHT CONTROL HYDRAULIC FILTER—Warning indicator popped?

AFT ROTARY - WING DRIVE SHAFT AND THRUST BEARING HOUSING—Look for oil leakage and signs of overheating. Run your peepers over the support structure for cracks, loose or missing rivets and security of oil lines.

AFT ROTARY - WING DRIVE SHAFT MOUNTING POINTS—Focus on the four nuts. Replace any missing or broken nuts. MWO 55-1500-210-30/35 (13 Jan 70) gives you softer mounting nuts which are less likely to crack.



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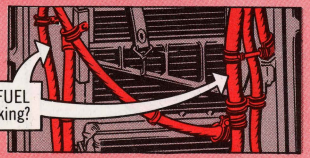
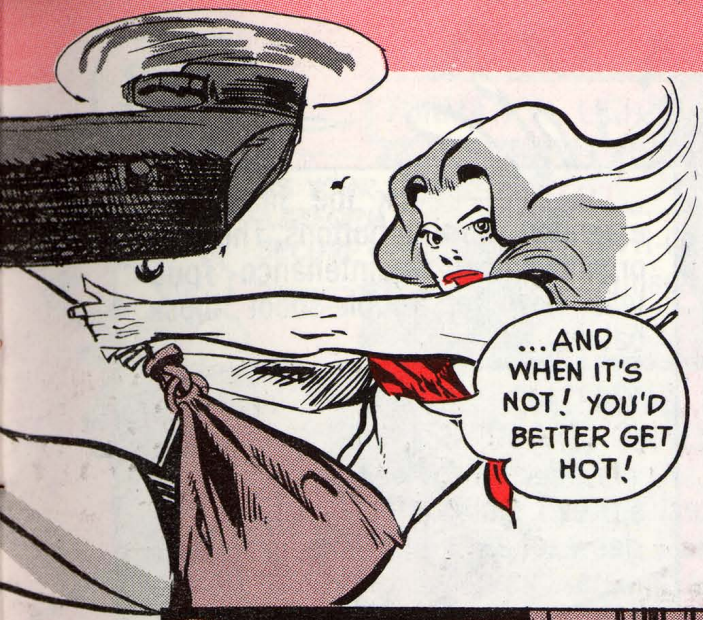
LUBRICATION, HYDRAULIC, FUEL LINES, HOSES—Chafing? Leaking?



PS MORE



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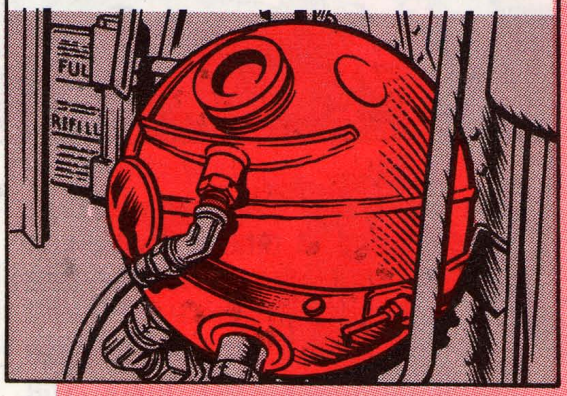

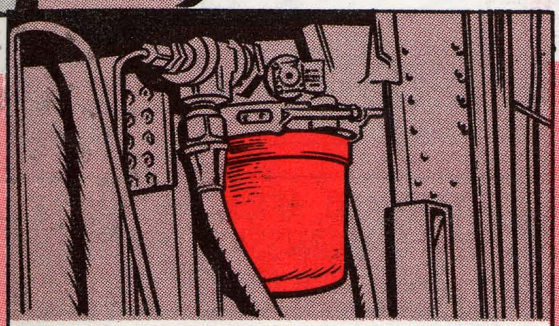

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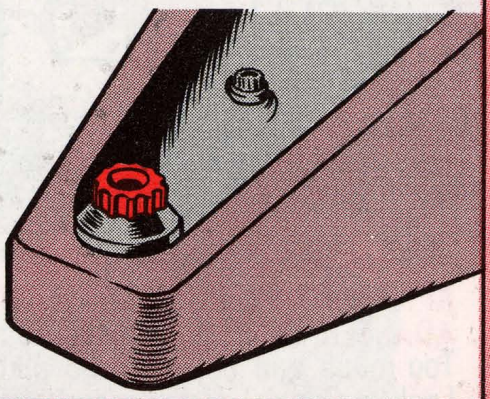
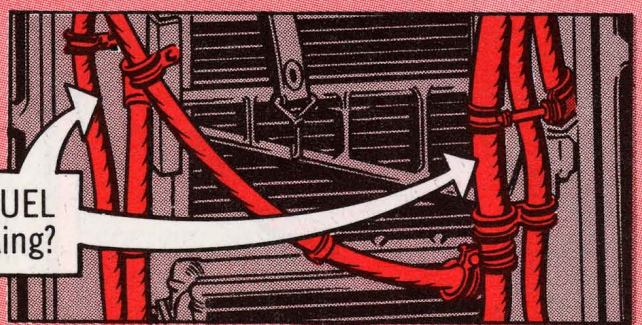
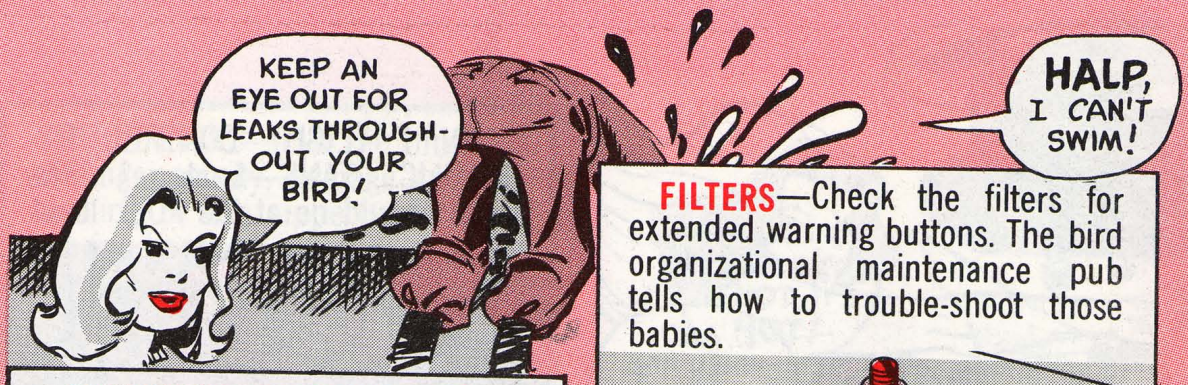


On birds prior to 64-13132 without MWO 55-1520-209-40/9 complied with, focus on thrust bearing supports, P/N 114S4806-1, longitudinal angles, P/N 114S4117-29, -31, web, P/N 114S4117-105 (station 541 to 575.5) and support channels, P/N 114S4118-15, -17, -19, -21, -23, -25, -27 and -29.

LUBRICATION, HYDRAULIC, FUEL LINES, HOSES—Chafing? Leaking?

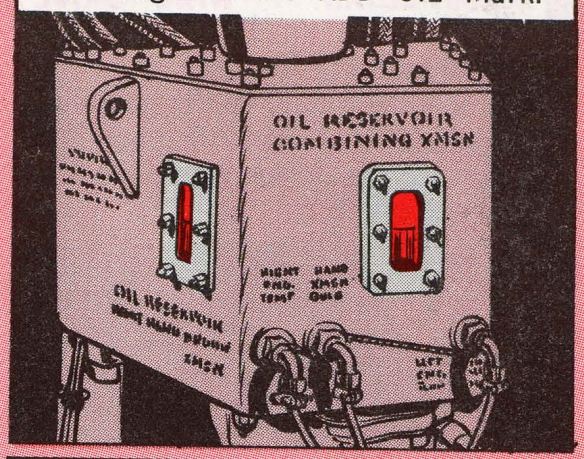


P.S MORE

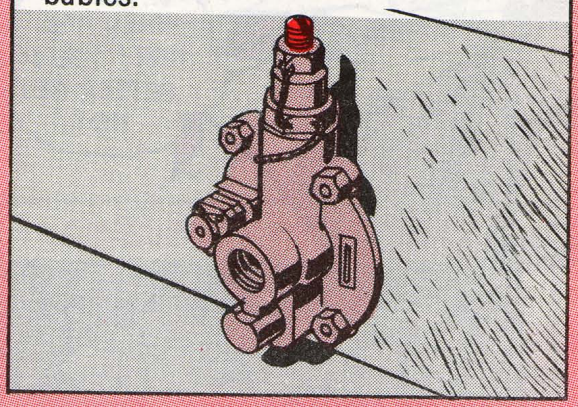


COMBINING TRANSMISSION — Look for leaks. Excessive leakage over a period of time will give you a messy work area ... maybe lose your footing!

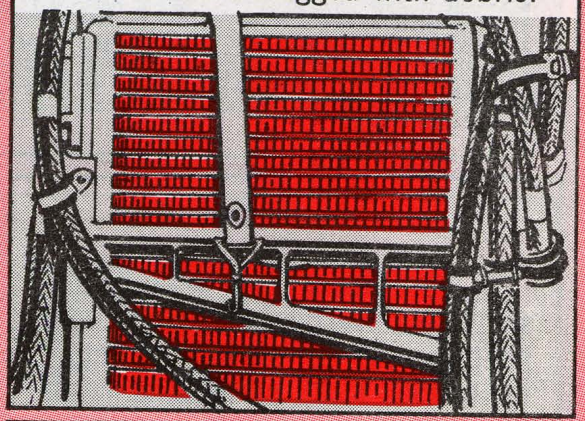
The oil level in the sight gage should be at the FULL mark. The maximum allowable leakage after a 2-hr flight is the ADD OIL mark.



FILTERS—Check the filters for extended warning buttons. The bird organizational maintenance pub tells how to trouble-shoot those babies.



FORWARD, AFT, COMBINING, ENGINE TRANSMISSION OIL COOLERS —Leaks? Core clogged with debris?



COMBINING TRANSMISSION TO AFT TRANSMISSION DRIVE SHAFT ADAPTER, PLATE—Secure? Cracks? Too much gap between the plates? Look in Chap 7 of the maintenance pub for the gap limits.

NO. 2 FLIGHT CONTROL HYDRAULIC TANK—Fluid level FULL? Leaks?

NO. 2 FLIGHT CONTROL HYDRAULIC FILTER—Warning indicator popped?

SWIVELING ACTUATOR—Secure? Some leakage is allowed. Eye the maintenance pub, Chap 9, for limits. **SUPPORTS**—Look for cracks and loose or missing rivets.

FORMATION LIGHTS—Damaged?

IS YOUR PLATFORM SECURE?

ANTI-COLLISION LIGHT—Damaged?

WORK PLATFORMS, FAIRING, ACCESS DOORS, PANELS—Check 'em for damage, closure, and positive locking. Eye the latchpins and receptacles for wear. Make sure the oil cooler air screens are free of debris.

ROTARY - WING BLADE SURFACES, EDGES AND TIP FAIRINGS—Position the blade over the fuselage walkway or aft work platform. Follow the inspection poop in Chap 8 of the pub, looking for dents, cracks and security of adjoining components.

FORWARD ROTOR, CROWN, TUNNEL

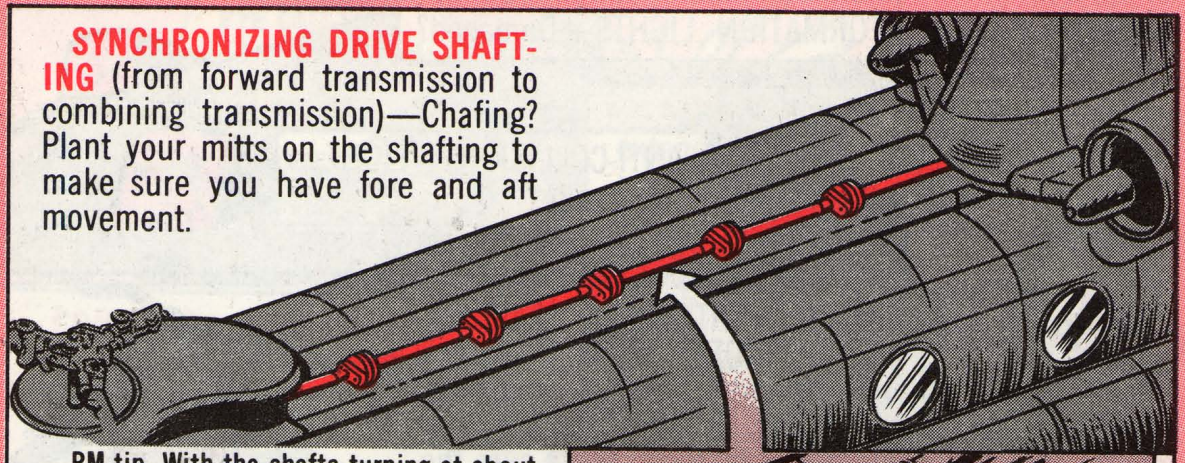
FORMATION LIGHTS—DAMAGED?

LUBRICATION, FUEL, HYDRAULIC LINES, HOSES—LEAKS? ELECTRICAL WIRE BUNDLES—Chafing?

ROTARY - WING BLADE SURFACES, EDGES, TIP FAIRINGS—Go over these babies with the same care you used on the aft blades, sure 'nuff.

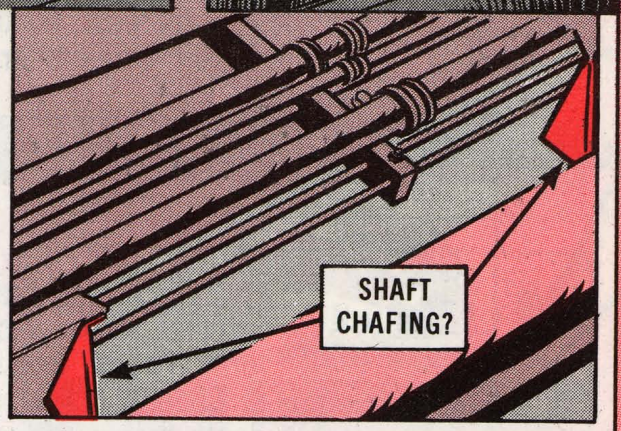
PS MORE

SYNCHRONIZING DRIVE SHAFTING (from forward transmission to combining transmission)—Chafing? Plant your mitts on the shafting to make sure you have fore and aft movement.



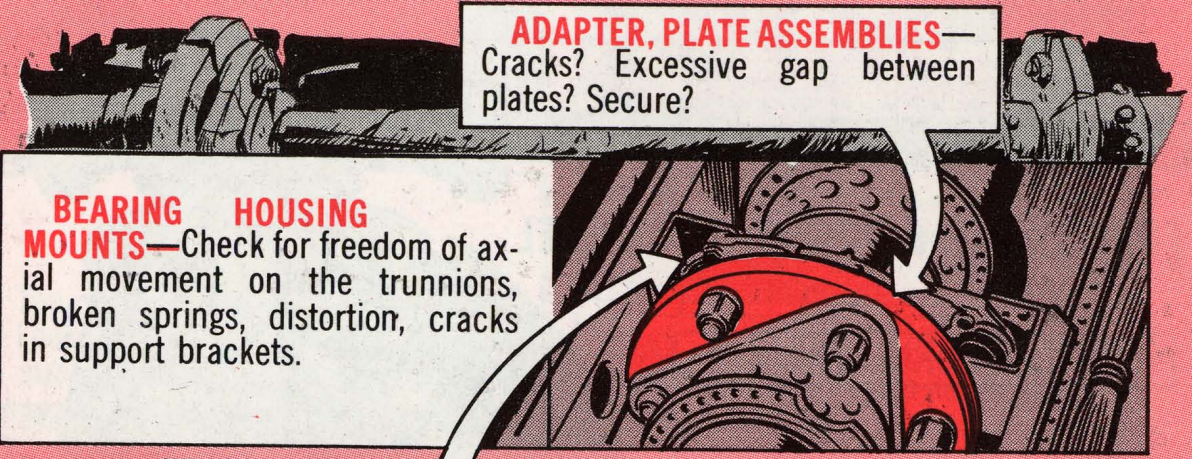
PM tip. With the shafts turning at about 7,000 RPM any tool or piece of hardware left in the tunnel can cut thru a shaft in no time. If that happens the rotors will slice into each other . . . you've bought the farm.

So, when you pull any maintenance or inspection look for loose hardware, tools, rags and other foreign matter—especially topside and at the engine inlets. Those words of wisdom on FOD, and more, are in the special inspection section of the -20.



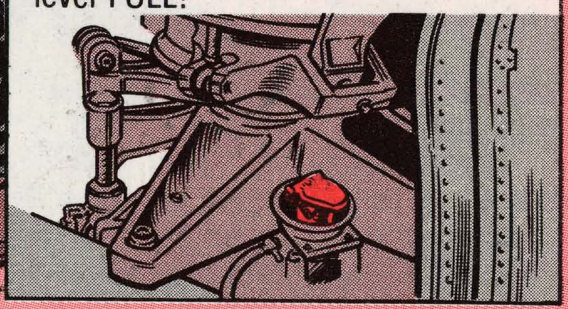
ADAPTER, PLATE ASSEMBLIES—Cracks? Excessive gap between plates? Secure?

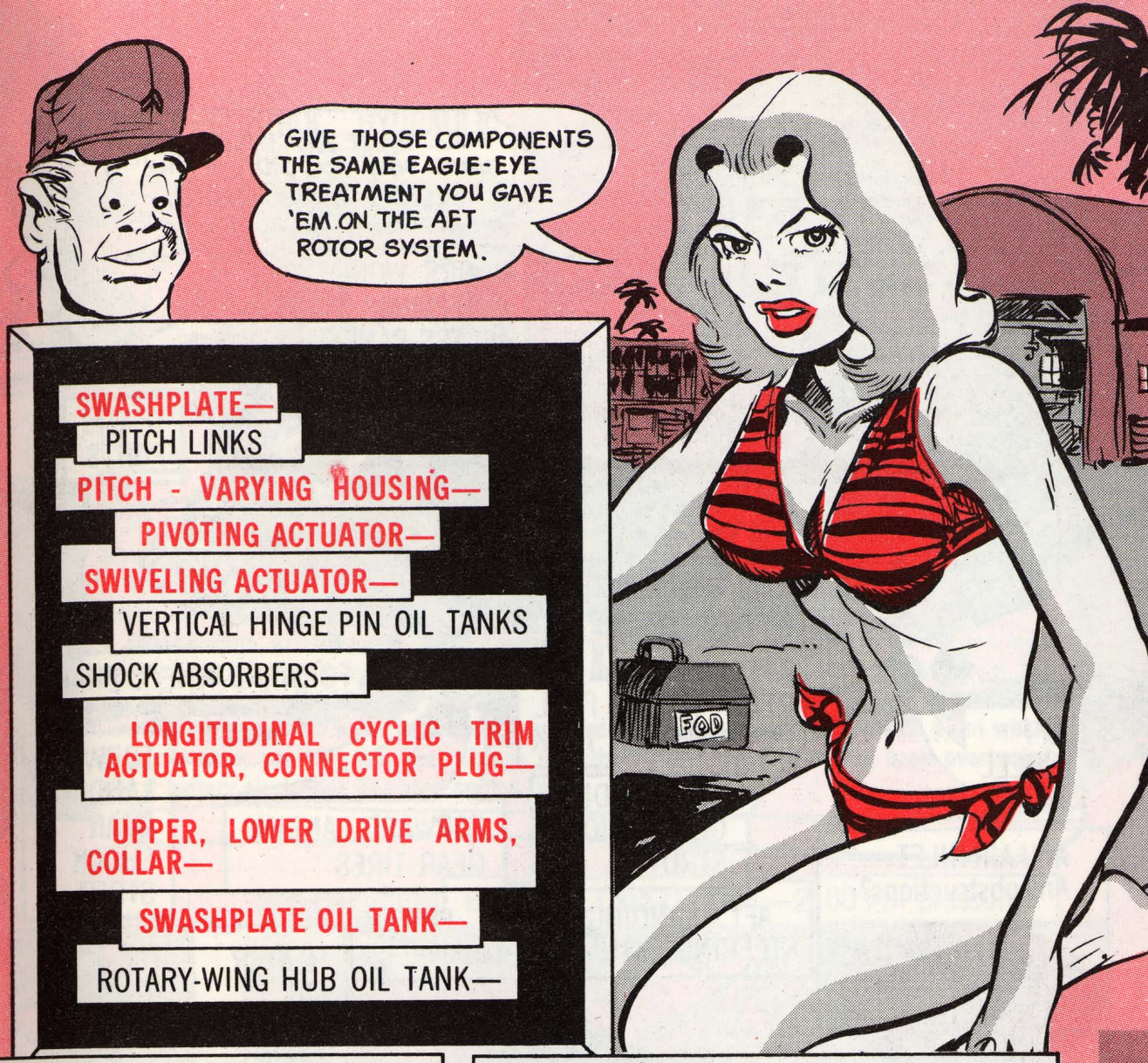
BEARING HOUSING MOUNTS—Check for freedom of axial movement on the trunnions, broken springs, distortion, cracks in support brackets.



BEARINGS—Overheating?

FORWARD TRANSMISSION—Oil level FULL?





SWASHPLATE—

PITCH LINKS

PITCH - VARYING HOUSING—

PIVOTING ACTUATOR—

SWIVELING ACTUATOR—

VERTICAL HINGE PIN OIL TANKS

SHOCK ABSORBERS—

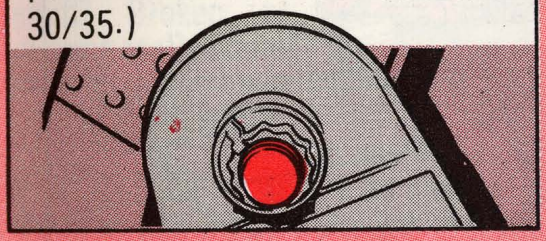
LONGITUDINAL CYCLIC TRIM ACTUATOR, CONNECTOR PLUG—

UPPER, LOWER DRIVE ARMS, COLLAR—

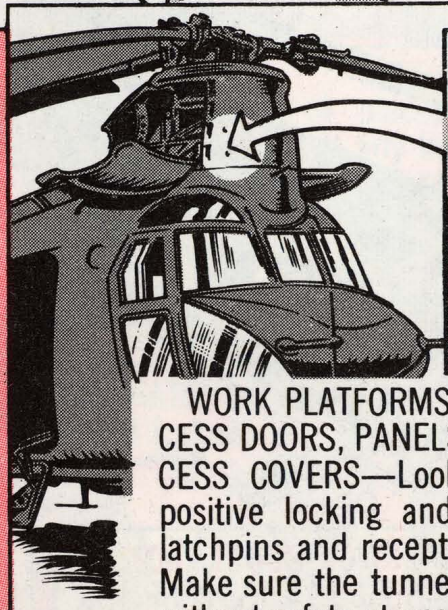
SWASHPLATE OIL TANK—

ROTARY-WING HUB OIL TANK—

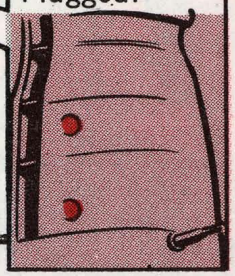
FORWARD TRANSMISSION MOUNTING POINTS—Make sure the four mounting nuts are in place. Replace all missing or broken hardware. Eye the slippage marks on the mounting bolts.(Applies to choppers without MWO 55-1500-210-30/35.)



LUBRICATION, HYDRAULIC LINES, HOSES—Leaks? ELECTRICAL WIRE BUNDLES—Chafing?



SAS PORTS—Plugged?



WORK PLATFORMS, FAIRING, ACCESS DOORS, PANELS, TUNNEL ACCESS COVERS—Look for damage, positive locking and closure. Eye latchpins and receptacles for wear. Make sure the tunnel cover latches without safety straps are lockwired.

PS MORE

RIGHT SIDE

PULL THESE PM CHECKS THE SAME WAY YOU DID ON THE LEFT SIDE OF THIS BIRD.

NAVIGATION LIGHTS

FLUID DRAIN, VENT LINES

ANTENNAS, SUPPORTS

DOORS, WORK PLATFORMS, ACCESS PANELS

STATIC PORTS

AFT LANDING GEAR TIRES

FUEL TANK

FORWARD WHEEL BRAKE

AFT WHEEL BRAKE

AFT LANDING GEAR SHOCK STRUT

FORWARD LANDING GEAR TIRES

FORWARD LANDING GEAR SHOCK STRUT

APU AIR INLET—Any obstructions?

AFT LANDING GEAR POWER STEERING ACTUATOR—Leaking?

HEATER AIR INTAKE. DRAINS—Clear?

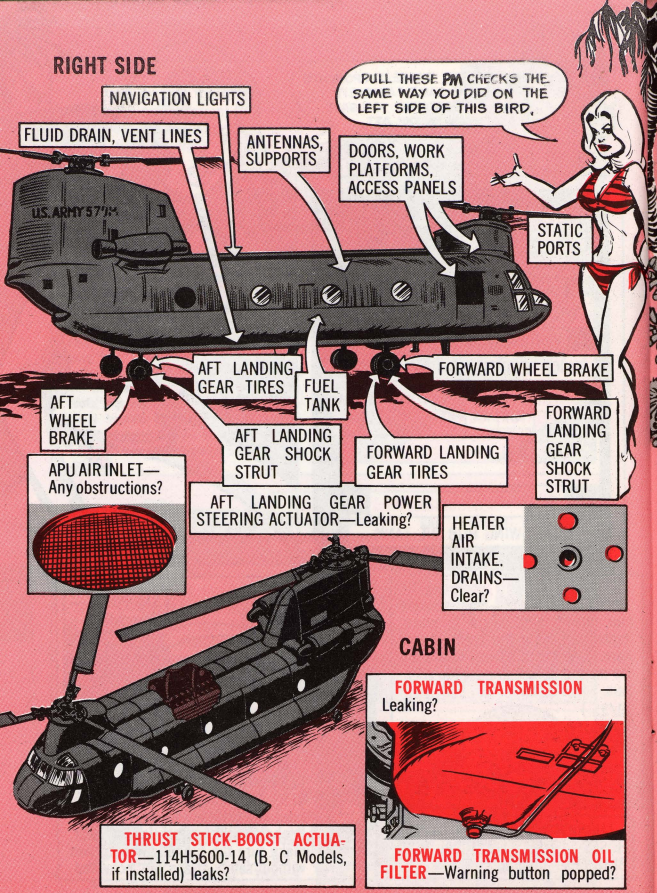
CABIN

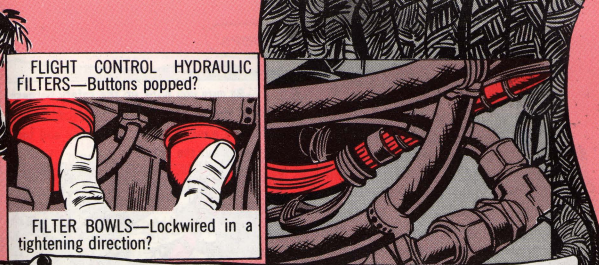
FORWARD TRANSMISSION —Leaking?

THRUST STICK-BOOST ACTUATOR—114H5600-14 (B, C Models, if installed) leaks?

FORWARD TRANSMISSION OIL FILTER—Warning button popped?

RIGHT SIDE



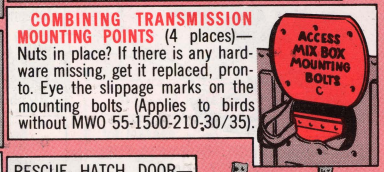


PM tip. Faulty wiring can give you equipment failures, so eyeball all wire bundles that you have access to on the Daily.

Replace wiring when its inner insulation is discolored or deteriorated because that means the inner insulation has been soaked with fuel, oil, lube or hydraulic fluid.

Discoloration of the outer insulation only is not a problem and does not require wire replacement. If there's hydraulic fluid or lube on the outer insulation, it won't ruin the wire. Just wipe it off with a dry cloth.

Change wiring if the outer insulation is cracked, chaffed thru or brittle to the point where it cracks when you flex the wire. Change wire that shows signs of having been overheated and if battery electrolyte has been spilled on it.



MORE

FLIGHT CONTROL HYDRAULIC FILTERS—Buttons popped?

FILTER BOWLS—Lockwired in a tightening direction?

PM tip. Faulty wiring can give you equipment failures, so eyeball all wire bundles that you have access to on the Daily.

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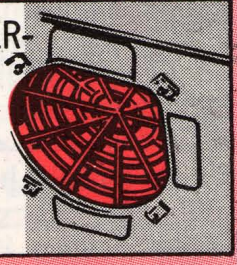
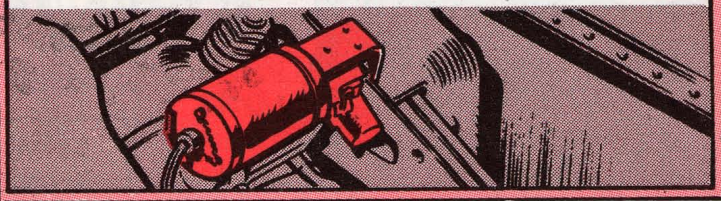
TRANSFORMER-RECTIFIER AIR INLET SCREENS—Any blockage?

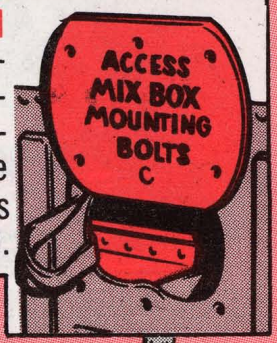


EXTERNAL CARGO HOOK—2100 PSI pressure?



FIRST AID KITS — You should have 7 kits in the cabin. Inspection tag up to snuff? Broken or missing seal? Secure?

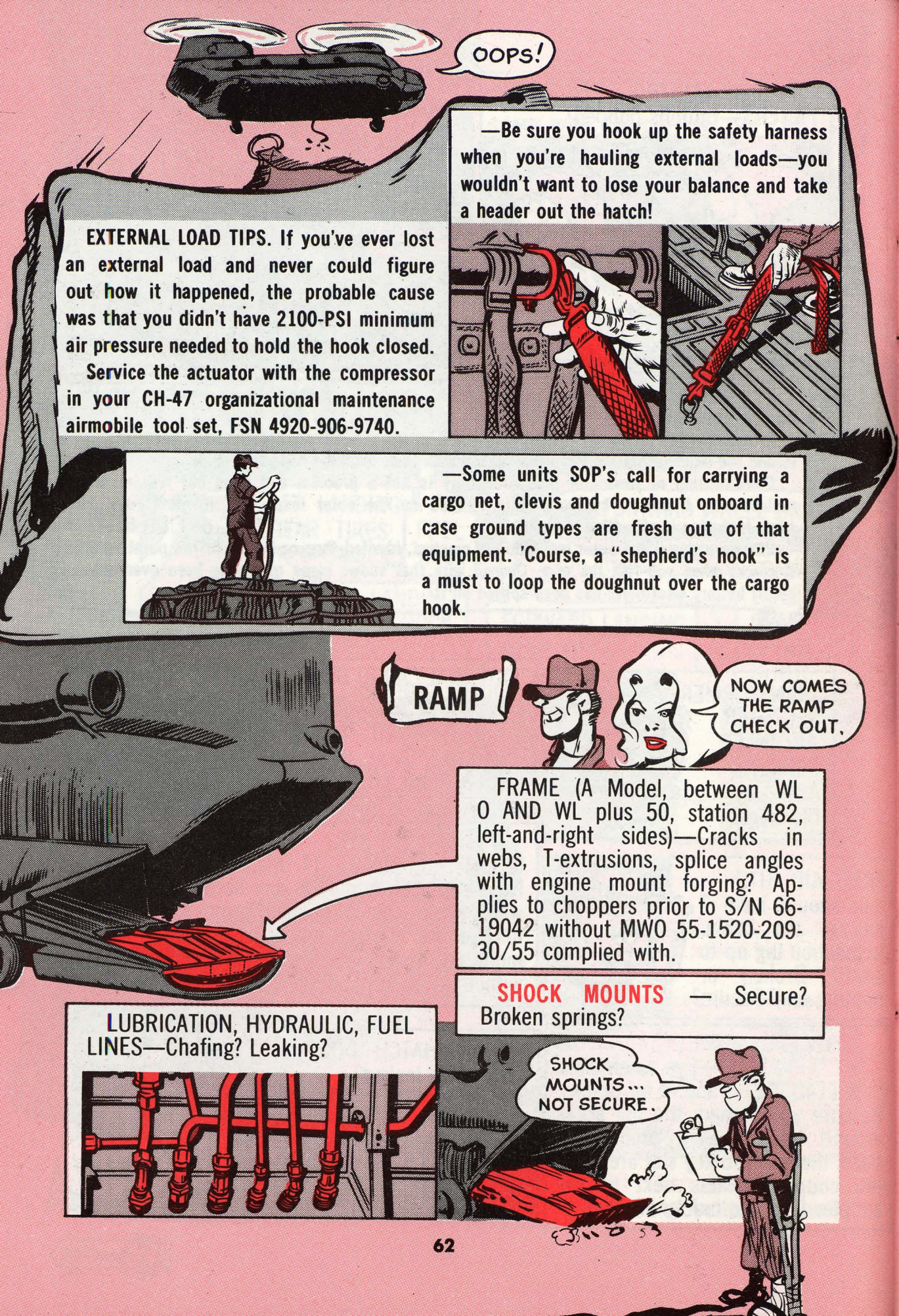
COMBINING TRANSMISSION MOUNTING POINTS (4 places)—Nuts in place? If there is any hardware missing, get it replaced, pronto. Eye the slippage marks on the mounting bolts (Applies to birds without MWO 55-1500-210-30/35).



FORWARD TRANSMISSION ADAPTER, PLATE—Eye assemblies, P/N 114D3067-2 and -4 for cracks. Be sure you inspect the lug areas around the coupling attachment bolts, the bathtub key slot area and the coupling plates next to the adapter lugs. No cracks allowed.

RESCUE HATCH DOOR—Closed and locked?

PS MORE


OOPS!
—Be sure you hook up the safety harness when you're hauling external loads—you wouldn't want to lose your balance and take a header out the hatch!
EXTERNAL LOAD TIPS. If you've ever lost an external load and never could figure out how it happened, the probable cause was that you didn't have 2100-PSI minimum air pressure needed to hold the hook closed.
Service the actuator with the compressor in your CH-47 organizational maintenance airmobile tool set, FSN 4920-906-9740.
—Some units SOP's call for carrying a cargo net, clevis and doughnut onboard in case ground types are fresh out of that equipment. 'Course, a "shepherd's hook" is a must to loop the doughnut over the cargo hook.
RAMP
NOW COMES THE RAMP CHECK OUT.
FRAME (A Model, between WL 0 AND WL plus 50, station 482, left-and-right sides)—Cracks in webs, T-extrusions, splice angles with engine mount forging? Applies to choppers prior to S/N 66-19042 without MWO 55-1520-209-30/55 complied with.
SHOCK MOUNTS — Secure? Broken springs?
LUBRICATION, HYDRAULIC, FUEL LINES—Chafing? Leaking?
SHOCK MOUNTS... NOT SECURE.

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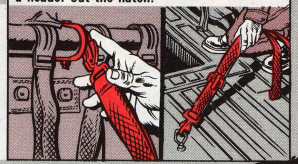

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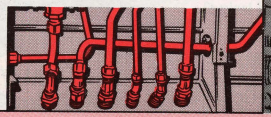
SHOCK MOUNTS — Secure? Broken springs?

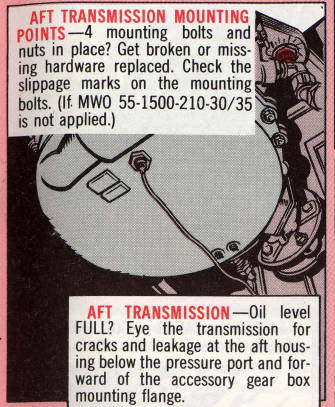
SHOCK MOUNTS... NOT SECURE.

LUBRICATION, HYDRAULIC, FUEL LINES—Chafing? Leaking?



AFT TRANSMISSION TO COMBINING TRANSMISSION DRIVE SHAFTING—Chafing?

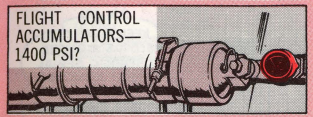
AFT TRANSMISSION MOUNTING POINTS—4 mounting bolts and nuts in place? Get broken or missing hardware replaced. Check the slippage marks on the mounting bolts. (If MWO 55-1500-210-30/35 is not applied.)



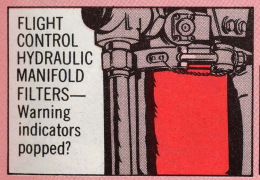
AFT TRANSMISSION—Oil level FULL? Eye the transmission for cracks and leakage at the aft housing below the pressure port and forward of the accessory gear box mounting flange.

AFT TRANSMISSION OIL FILTER—Warning button out?

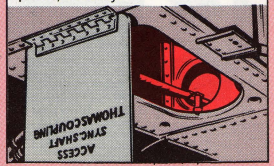
FLIGHT CONTROL ACCUMULATORS—1400 PSI?



FLIGHT CONTROL HYDRAULIC MANIFOLD FILTERS—Warning indicators popped?

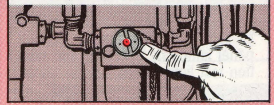


ADAPTER, PLATE—Look for cracks, excessive gap between plates, security.



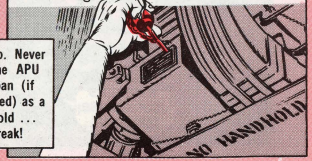
BEARING HOUSING—Look for discoloration of the housing or melted grease which would indicate overheating.

UTILITY HYDRAULIC FILTERS—Warning button popped?



UTILITY HYDRAULIC PRESSURE TANK—Hydraulic fluid FULL? Any leaks?

APU—Oil level OK? Eye the accessory section and hydraulic pump for leakage.

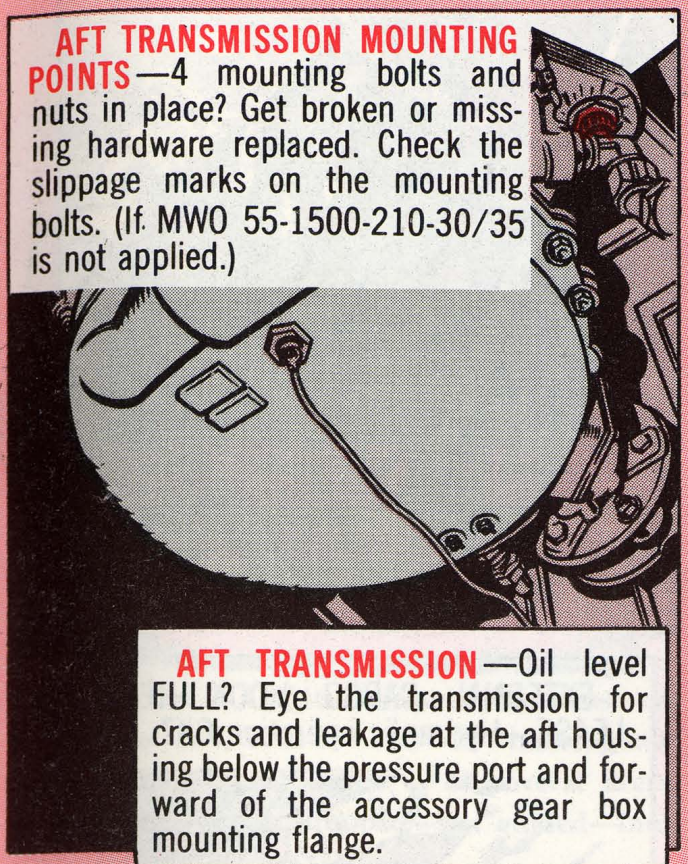


PM tip. Never use the APU drip pan (if installed) as a handhold ... it'll break!

PS MORE

AFT TRANSMISSION TO COMBINING TRANSMISSION DRIVE SHAFTING—Chafing?

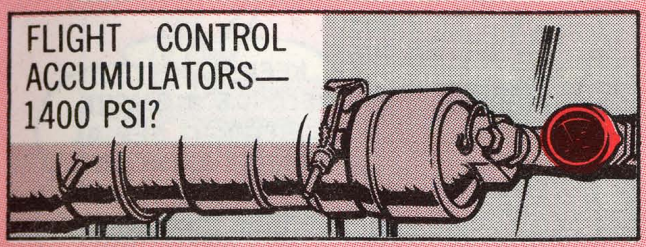
AFT TRANSMISSION MOUNTING POINTS—4 mounting bolts and nuts in place? Get broken or missing hardware replaced. Check the slippage marks on the mounting bolts. (If MWO 55-1500-210-30/35 is not applied.)



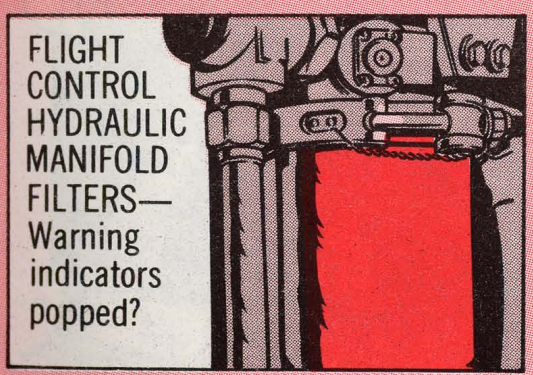
AFT TRANSMISSION—Oil level FULL? Eye the transmission for cracks and leakage at the aft housing below the pressure port and forward of the accessory gear box mounting flange.

AFT TRANSMISSION OIL FILTER—Warning button out?

FLIGHT CONTROL ACCUMULATORS—1400 PSI?



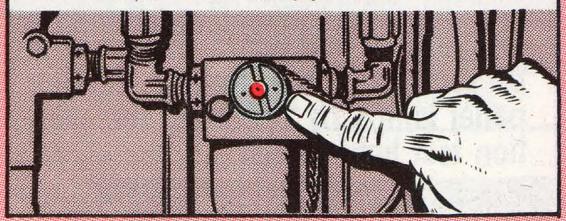
FLIGHT CONTROL HYDRAULIC MANIFOLD FILTERS—Warning indicators popped?



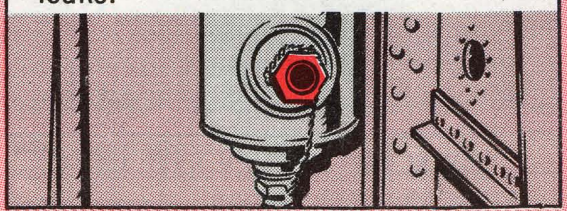
ADAPTER, PLATE—Look for cracks, excessive gap between plates, security.

BEARING HOUSING—Look for discoloration of the housing or melted grease which would indicate overheating.

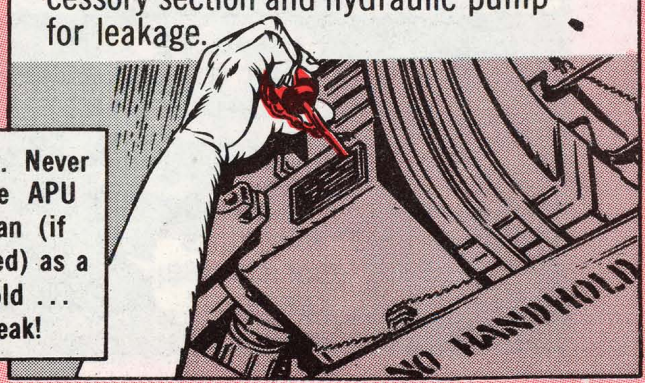
UTILITY HYDRAULIC FILTERS—Warning button popped?



UTILITY HYDRAULIC PRESSURE TANK—Hydraulic fluid FULL? Any leaks?

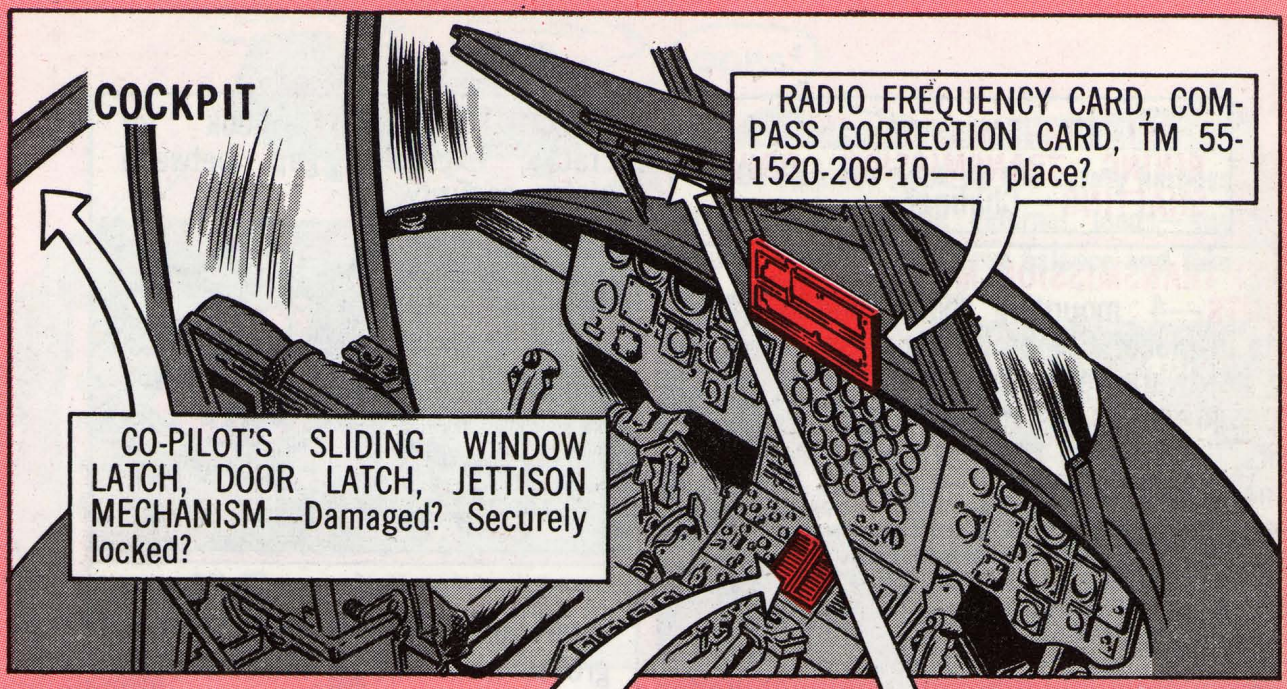


APU—Oil level OK? Eye the accessory section and hydraulic pump for leakage.



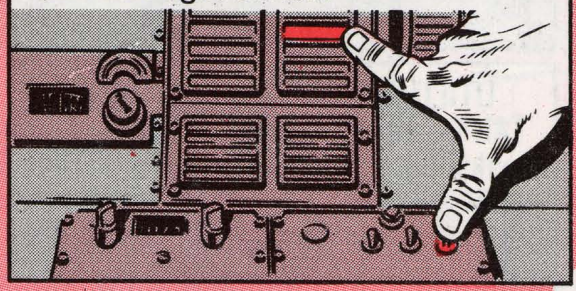
PM tip. Never use the APU drip pan (if installed) as a handhold . . . it'll break!

PS MORE



POWER CHECKS

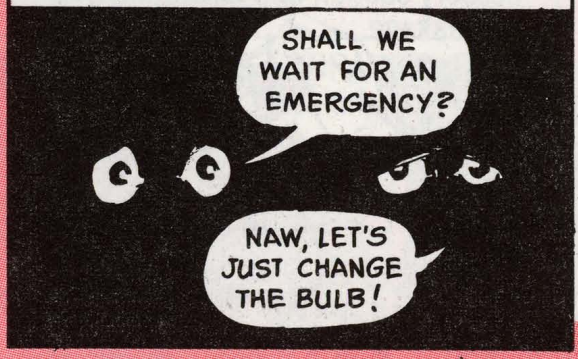
ENGINE AND TRANSMISSION CHIP DETECTOR CAUTION LIGHTS —The light will be on if metal is present. Test the master caution panel lamps by operating the caution test light switch.

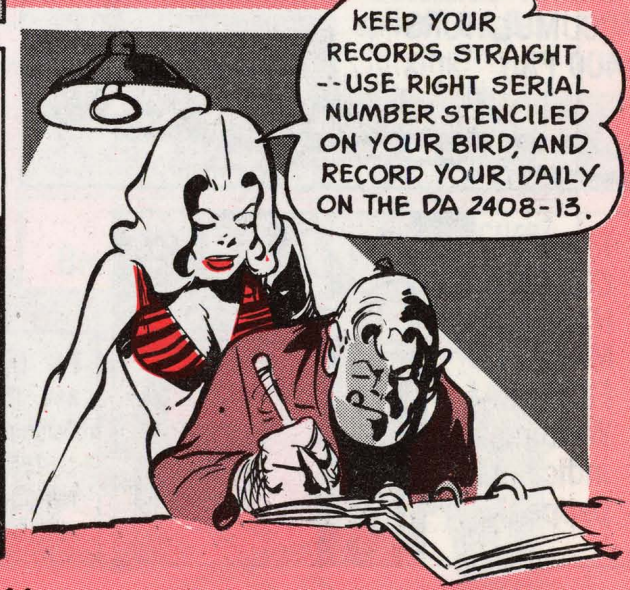


BATTERY EMERGENCY BUS RELAY—Operates?

EXTERNAL CARGO HOOK RELEASE—Hydraulic operation OK?

CABIN EMERGENCY EXIT LIGHTS —Work?
RAMP EMERGENCY EXIT LIGHT —Work?



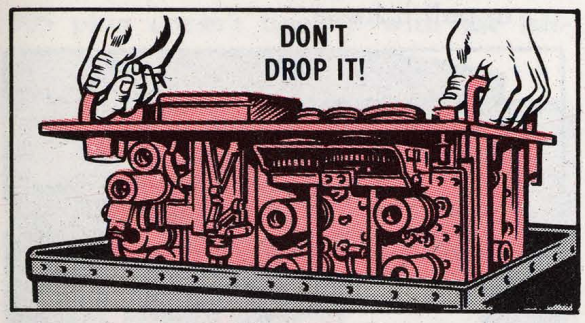


PS END

A CASE LIKE THIS...

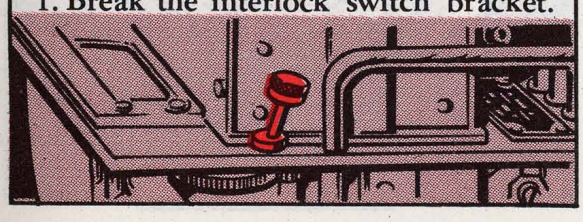
The RT-211() receiver-transmitter on the AN/TPX-26 and -27 interrogator sets can get banged up in several areas if the RT is dropped—not guided—into the CY-944A/TPX case.

It's easier to drop the RT into the case, what with all that weight behind it.

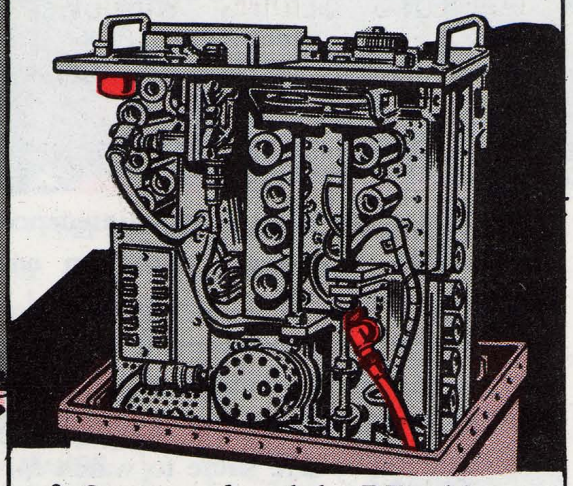


Trouble is, by shoving its weight around, the RT can:

1. Break the interlock switch bracket.



2. Bang and bend the Z-501 cover.

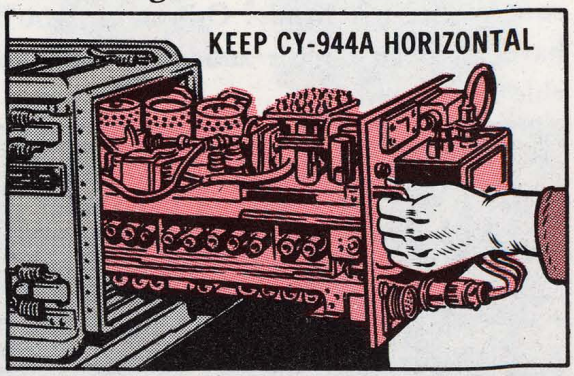


3. Scrape and peel the RF cables.

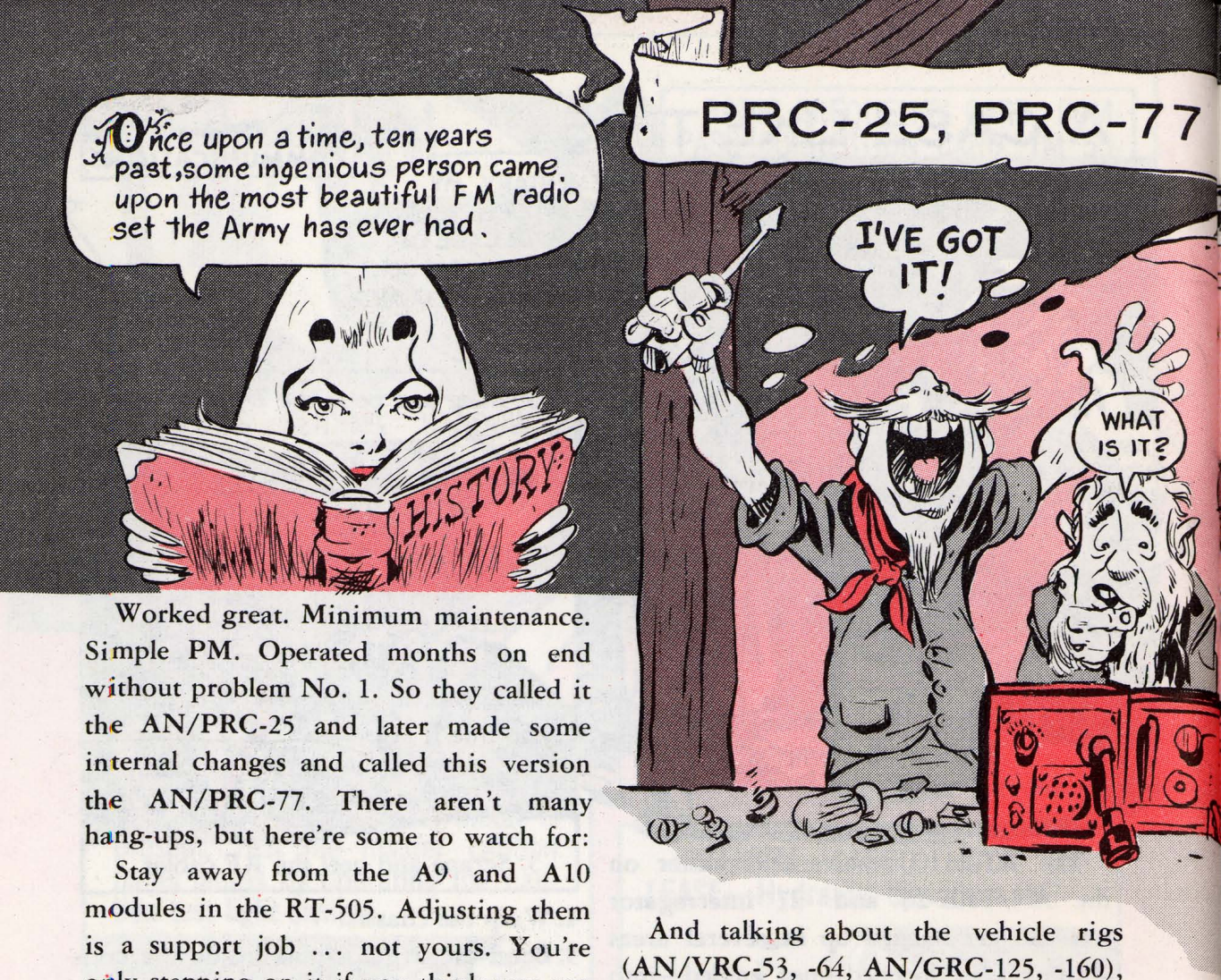
4. Warp the chassis.
5. Bend the 2 guide-pins inside the connection end of the CY-944A.

Case the RT-211() like this:

Keep the CY-944A horizontal. Match the RT rollers to the case tracks and slide the RT in smoothly. If you feel any resistance as you slide the RT, pull it out and start again.



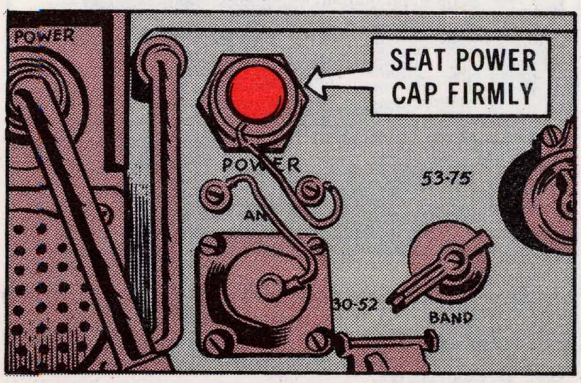
Never upend the case and leave it to weight, gravity and good luck to make the placement.



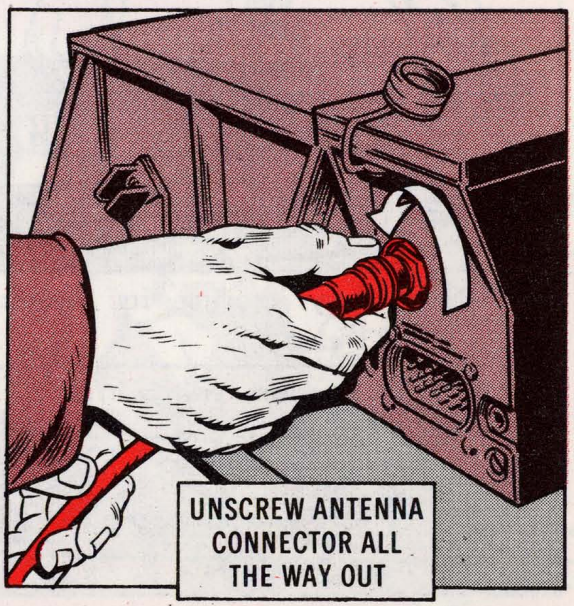
Worked great. Minimum maintenance. Simple PM. Operated months on end without problem No. 1. So they called it the AN/PRC-25 and later made some internal changes and called this version the AN/PRC-77. There aren't many hang-ups, but here're some to watch for:

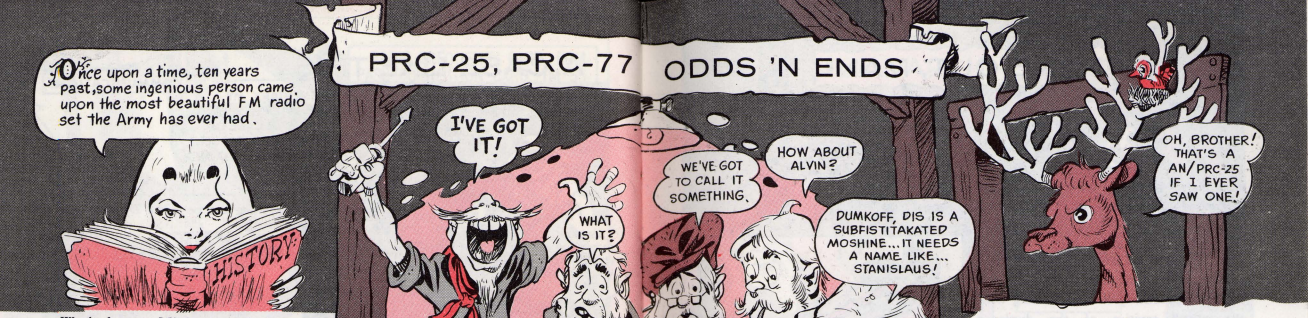
Stay away from the A9 and A10 modules in the RT-505. Adjusting them is a support job ... not yours. You're only stepping on it if you think you can cure or improve a problem by experimenting with adjustments.

When you replace the POWER CAP on the RT-505 for any reason (including when you remove the RT from the vehicle rig for back-pack operation) be sure you seat it firmly. Otherwise, you'll have an open circuit and you won't be able to transmit.



And talking about the vehicle rigs (AN/VRC-53, -64, AN/GRC-125, -160), be sure you unscrew the ANTENNA CONTROL connector in the rear of the AM-2060 all the way out before you try to pull it loose.





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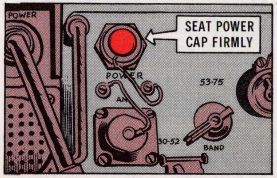

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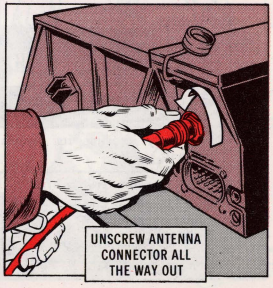
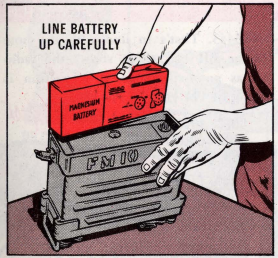


You could pull the blue insulator of the jack out with the connector.

If you're powering your RT with a BA-4386 battery which sports DAAB05-70-C-1472 contract number, and the RT-505 plug doesn't line up with the battery receptacle, blame the battery.



That contract, and a few odd batteries on other contracts, came out faulty, meaning you've got to play with the battery to line it up.

If your AT-271A whip antenna has any age on it, check out the ferrule.

Some are coming apart ... which doesn't help much when you're trying to keep the sections together.

If yours is loose or sliding, turn it into your support for repair or replacement.

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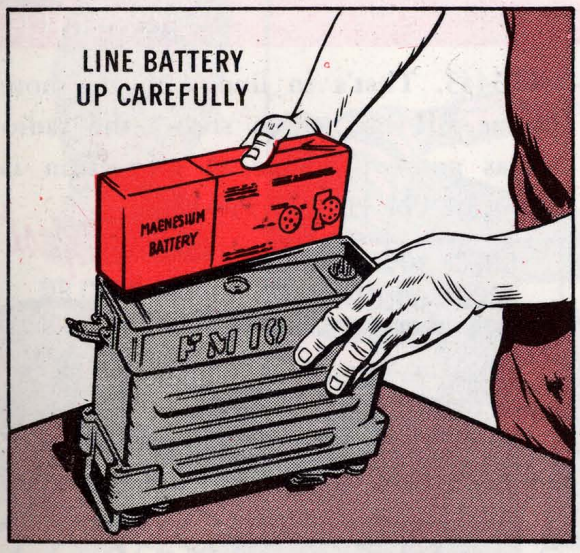

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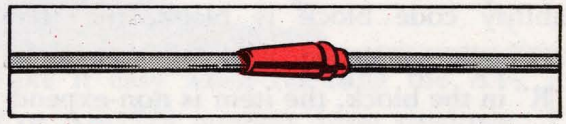

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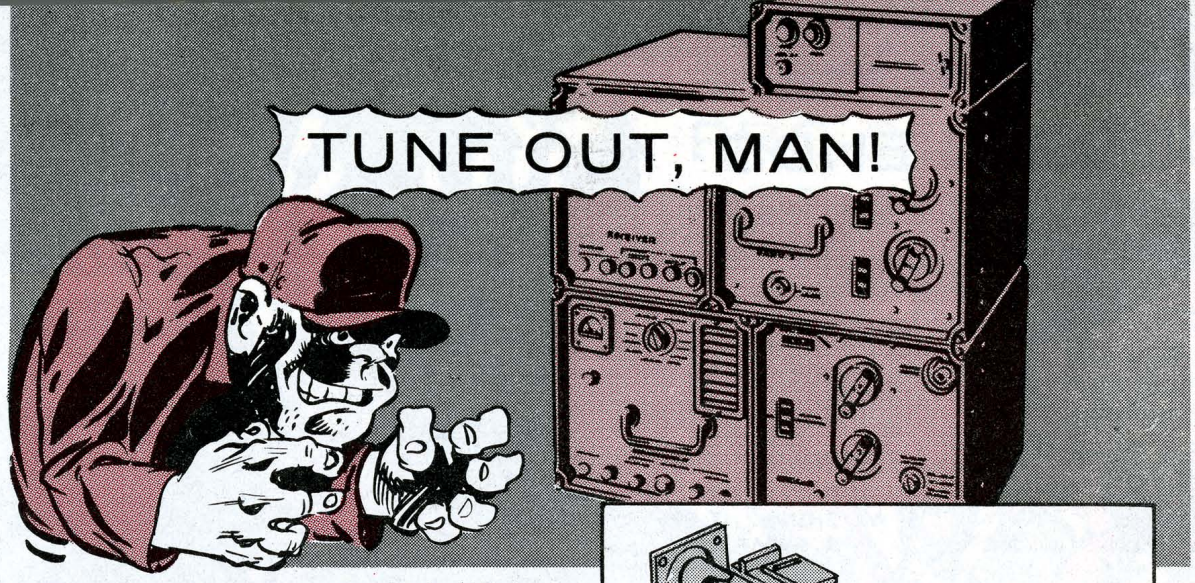
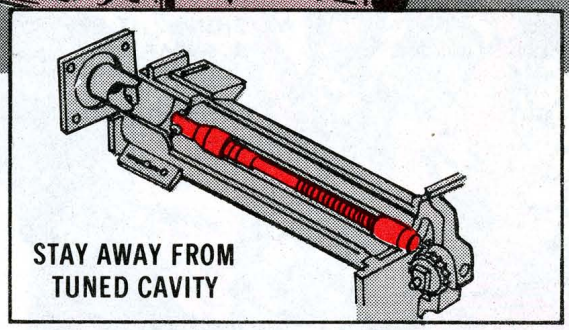


Hey, man, tune out quick if your brainwave suddenly aims at fiddling with the tuned cavities of the duplexer (2A1A1) in your AN/GRC-103 radio set.

That's a double tune-out if your fingers want to wander toward the 4 receiver section tuned cavities (2A1A1A1Z1).

Removing the end plate of the cavities, or even just turning the slotted screw in the end plate, will deadline the set.

What's more, the defective amplifier-converter must be sent all the way back



to depot for repair (even though it normally can be replaced in the field; normally, that is, providing nobody's messed with the tuned cavities).

So stay away, Ray, unless you're a depot-level repair type.

GRC-103 EXPENDABILITY

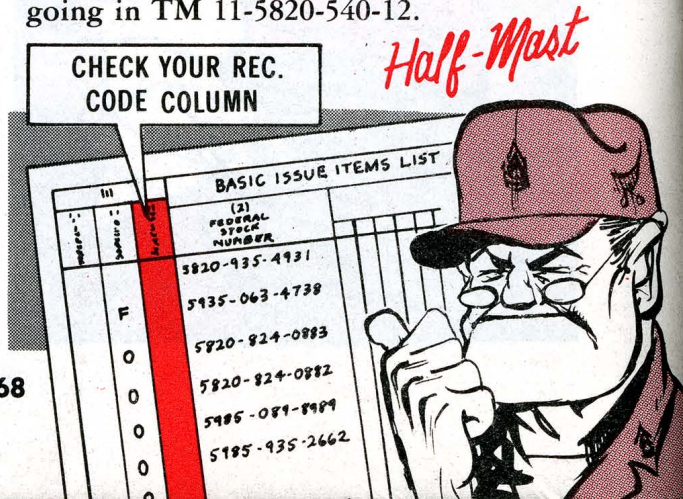
Dear Half-Mast,
What's the story on expendable and non-expendable items on the AN/GRC-103 radio set? The TM isn't exactly clear on it.

SGT. H.H.H.

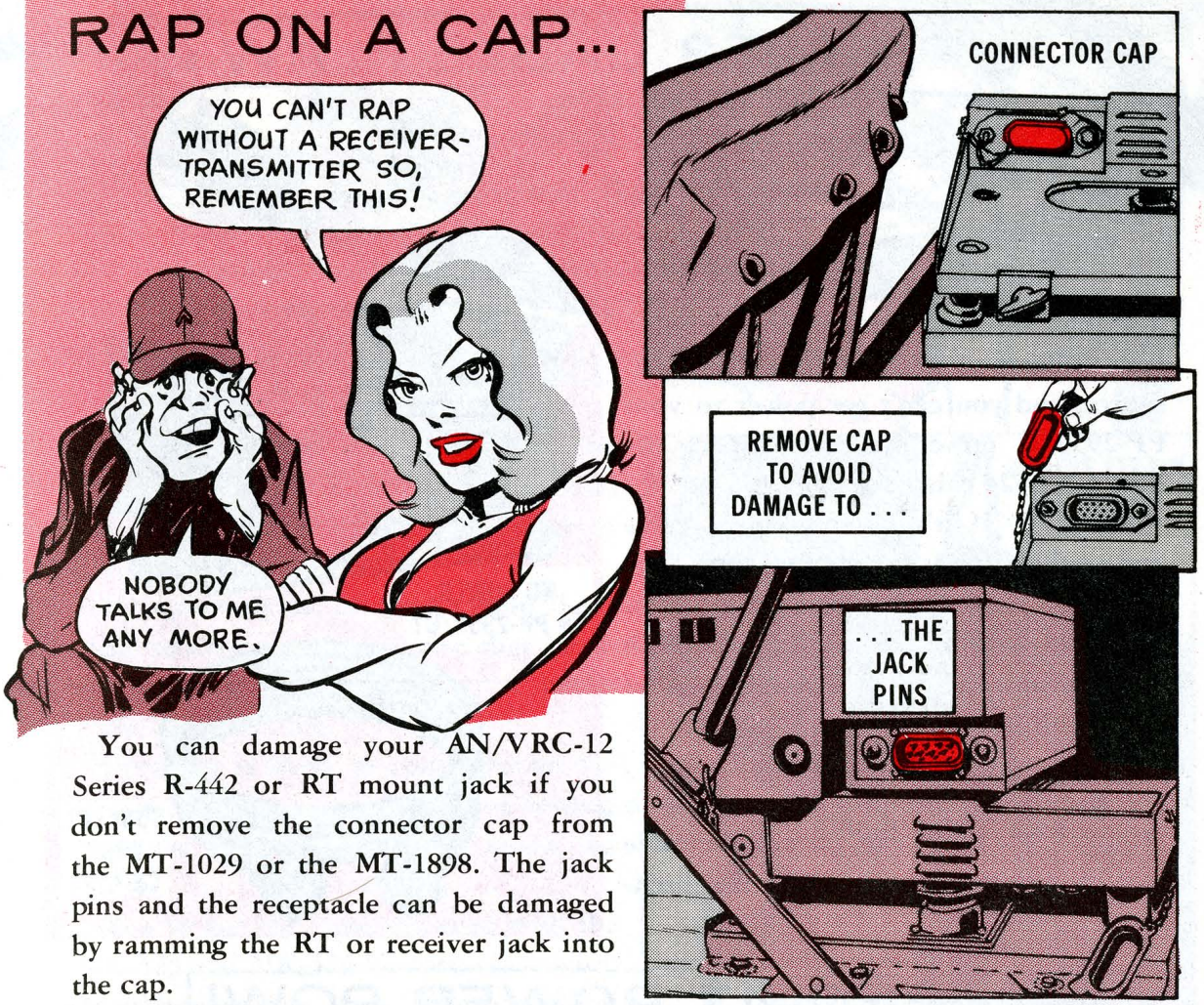
Dear Sergeant H.H.H.,

Items like small cable assemblies, stakes and other hardware are expendable. To clarify any BII, if the recoverability code block is blank, the item normally is expendable. If there's an "R" in the block, the item is non-expendable.

Latest word from the head shed on the GRC-103 is that all items are expendable except the AM-4316, DA-437, R-1329, T-983, AM-4320, AB-1072, RT-773 and CG-3443. That's in line with the note in the BII list which shows the radio set as non-expendable. A correction is going in TM 11-5820-540-12.

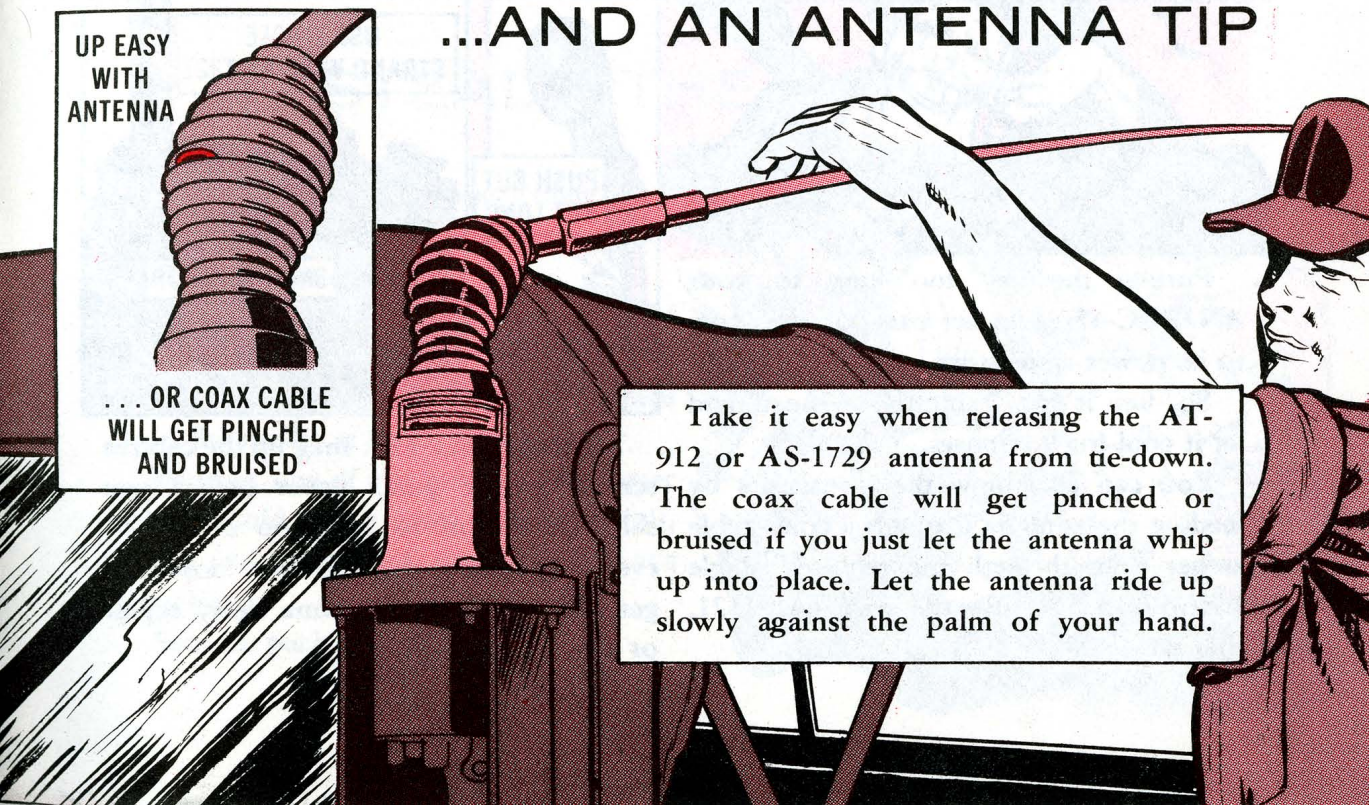


RAP ON A CAP...

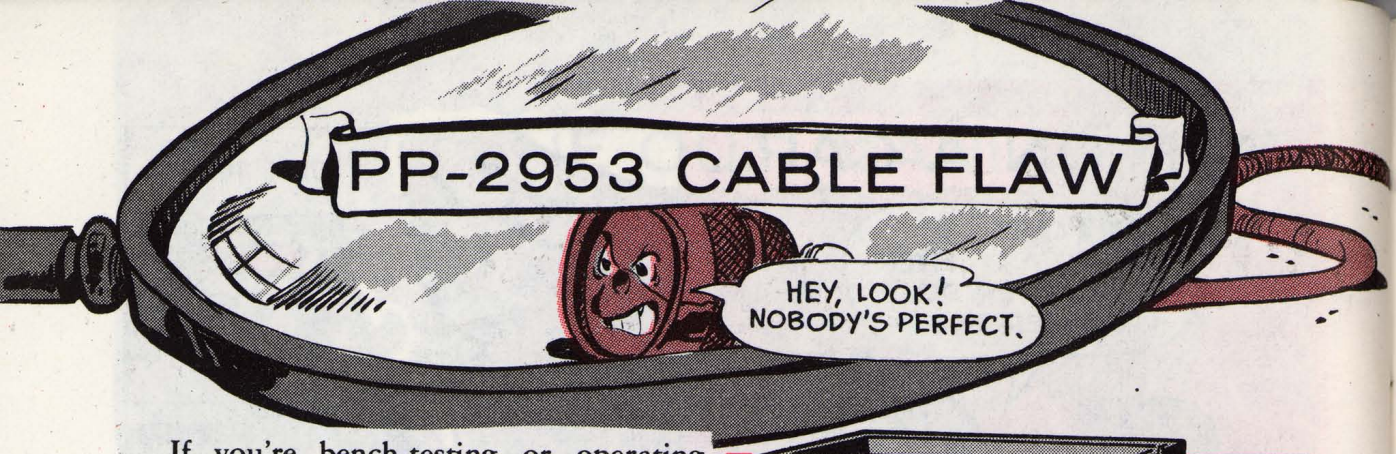


You can damage your AN/VRC-12 Series R-442 or RT mount jack if you don't remove the connector cap from the MT-1029 or the MT-1898. The jack pins and the receptacle can be damaged by ramming the RT or receiver jack into the cap.

...AND AN ANTENNA TIP



Take it easy when releasing the AT-912 or AS-1729 antenna from tie-down. The coax cable will get pinched or bruised if you just let the antenna whip up into place. Let the antenna ride up slowly against the palm of your hand.

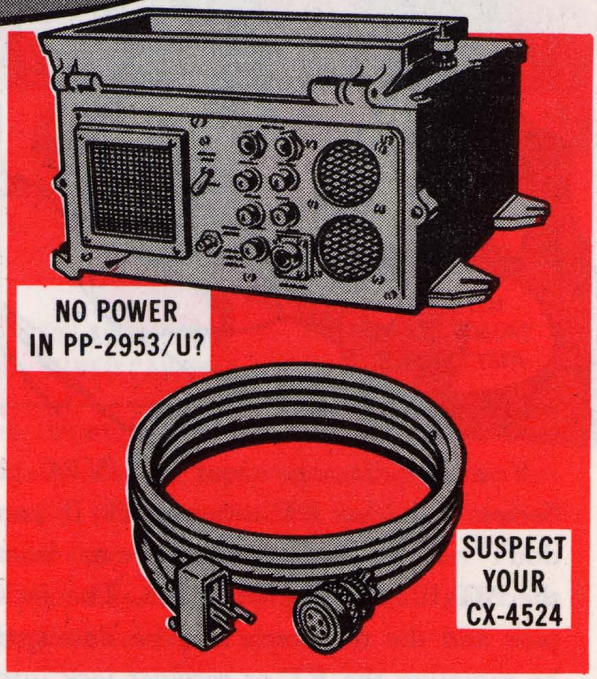


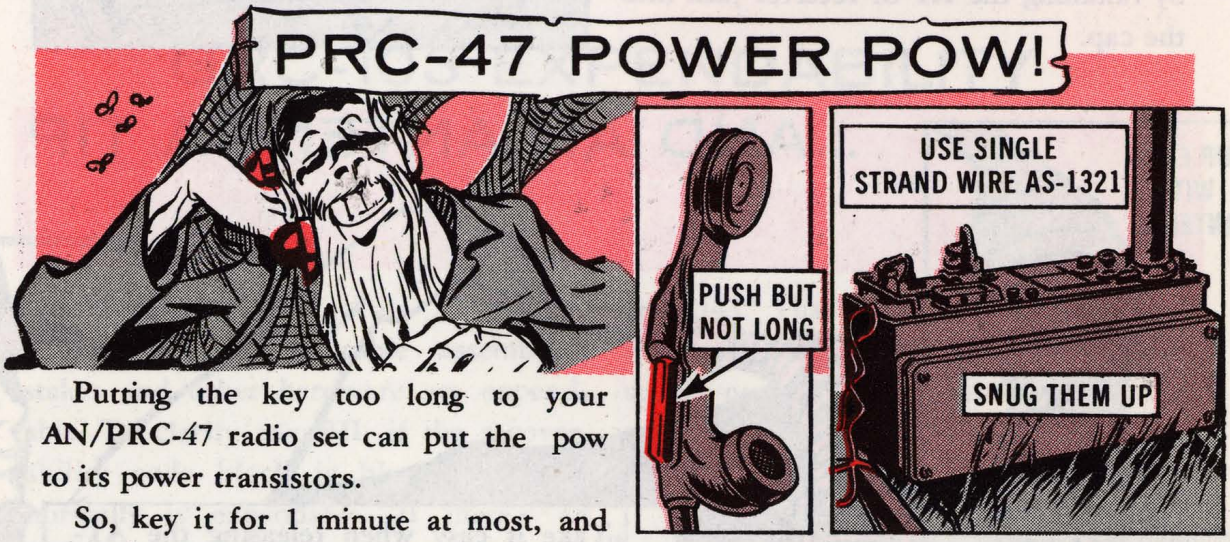
If you're bench-testing or operating your RT-246 or -524 from a fixed AC source, and you can't get power to your PP-2953/U power supply, suspect the PP's CX-4524 cable assembly.

Especially if it's a replacement cable and you're using it for the first time.

Some of the cable assemblies came from the manufacturer defective ... with pin C instead of pin B wired to ground (B is the ground in the PP).

If you get one, ask for a new cable ... and fire off an EIR (DA Form 2407) to USAECOM. If you can, include the cable and the contract number (off the package).





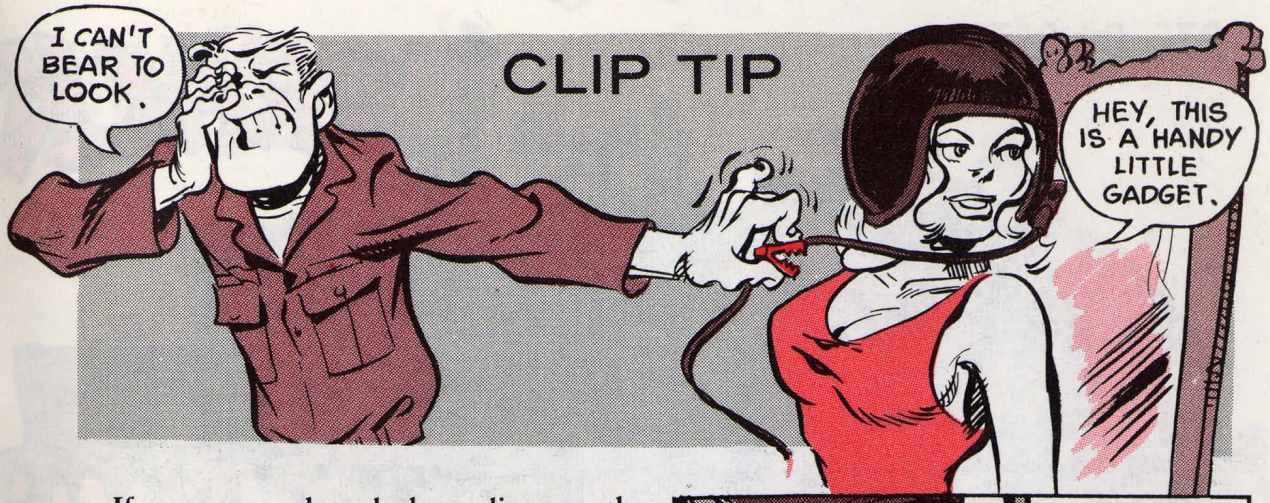
Putting the key too long to your AN/PRC-47 radio set can put the pow to its power transistors.

So, key it for 1 minute at most, and let it cool for 9 minutes.

You can also blow the transistors by feeding the antenna through a coax cable rather than through the required single strand wire. So use the wire (AS-1321, that is).

TRANSPORT TIP: snug up the captive screws on the panel cover before you ship the set off to the shop or wherever. Otherwise, they bounce loose and get lost ... which is gonna delay repair or use.

CLIP TIP

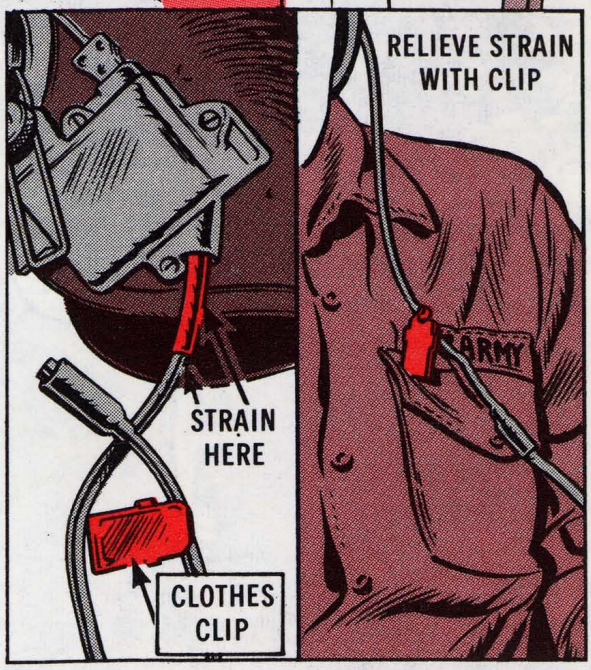


If you use the clothes clip on the MK-1039/AIC kit of your CVC helmet, you're a cinch to cut down breakage in the upper cord assembly.

By siphoning off the strain from the 2 main strain-points, you'll give that headset-microphone cord assembly a better crack at a good life.

Breakage is likely to come around the midpoint of the protective sleeve leading from the switchbox, and just below the sleeve.

You've got the same situation with the MK-525 and MK-526 kit cord assemblies. Trouble just hits in a different place, below the cable clamp.



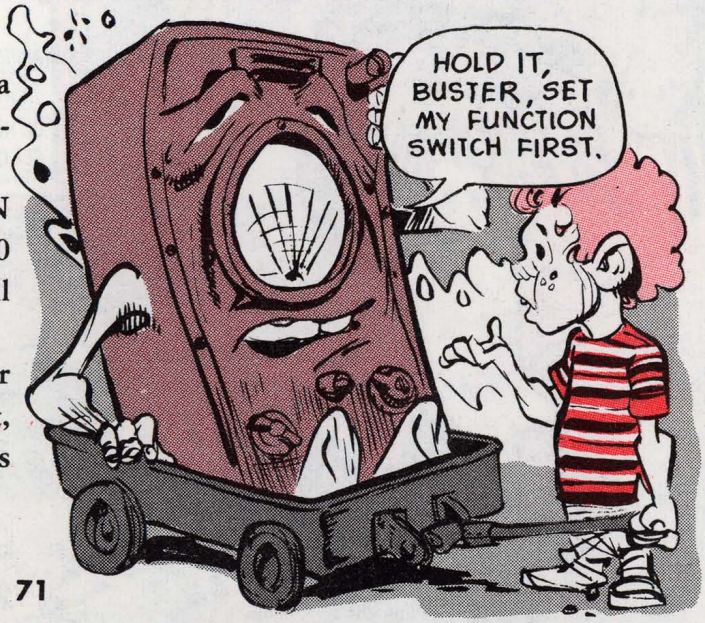
STEADY THE NEEDLE

When it's movin' time, there're a coupla things you can do for your TS-352B/U multimeter.

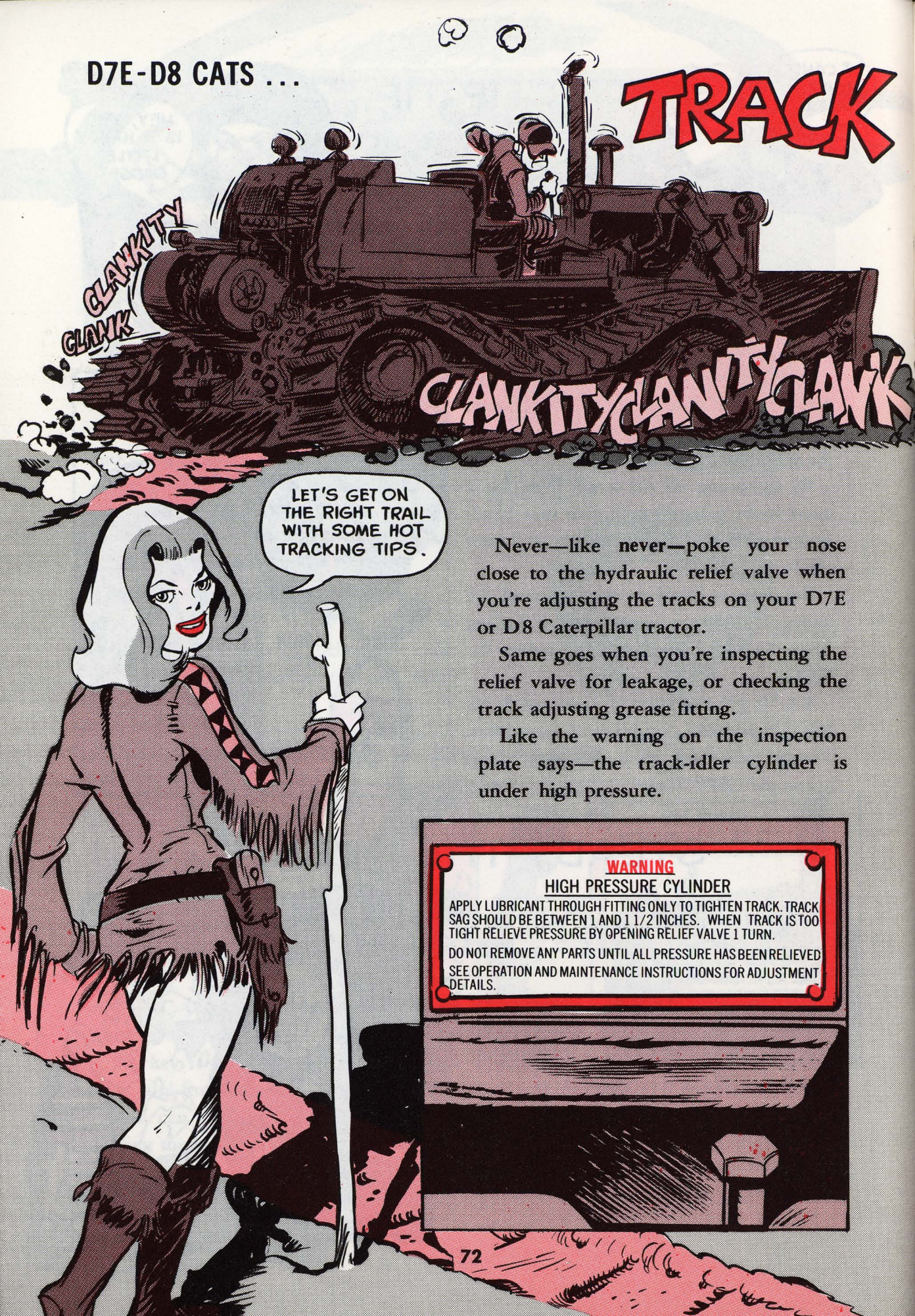
First, set the ME-9()/U FUNCTION switch at DC CURRENT or the 1000 ohms/volt position. Either setting will hold the needle at travel rest.

Without one of the settings, the meter needle could take a jump with every jolt, jiggle and jounce of the vehicle that's carrying it ... and get fouled up.

Second, pack 'er well.



D7E-D8 CATS . . .

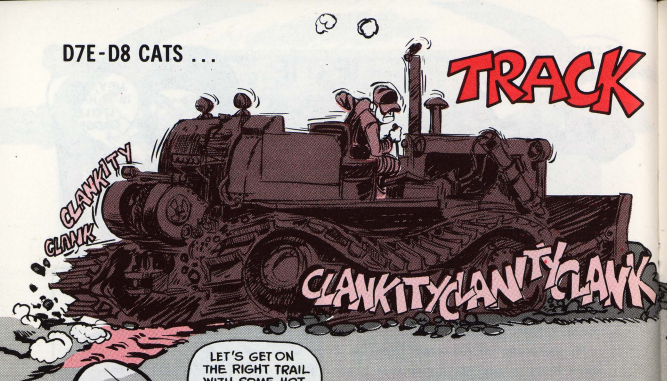


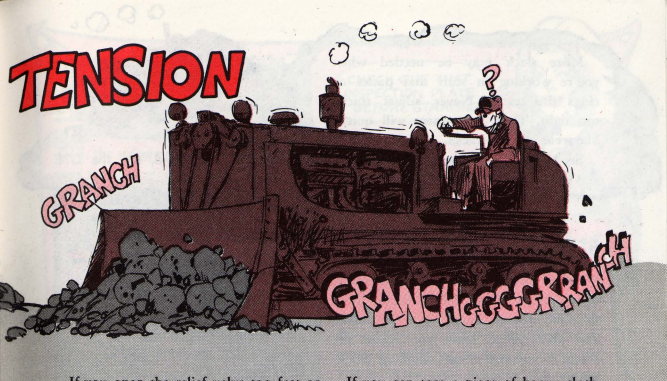
Never—like **never**—poke your nose close to the hydraulic relief valve when you're adjusting the tracks on your D7E or D8 Caterpillar tractor.

Same goes when you're inspecting the relief valve for leakage, or checking the track adjusting grease fitting.

Like the warning on the inspection plate says—the track-idler cylinder is under high pressure.

TRACK TENSION





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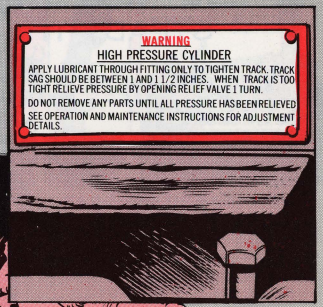
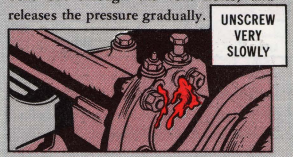


If you open the relief valve too fast or too far—you'll go beyond its safe limits, and it'll blast off and zap you.

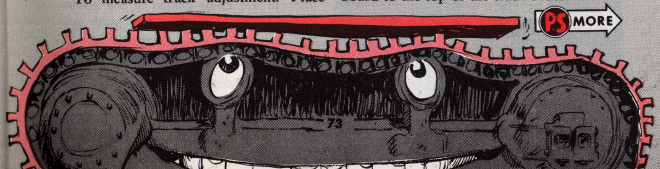
If you can toss a piece of heavy cloth or a piece of canvas over the relief valve while you're working on it, so much the better. Above all, remember—always unscrew the relief valve easy-like, and just a little at a time. That lets the grease ooze out through the vent holes, and releases the pressure gradually.

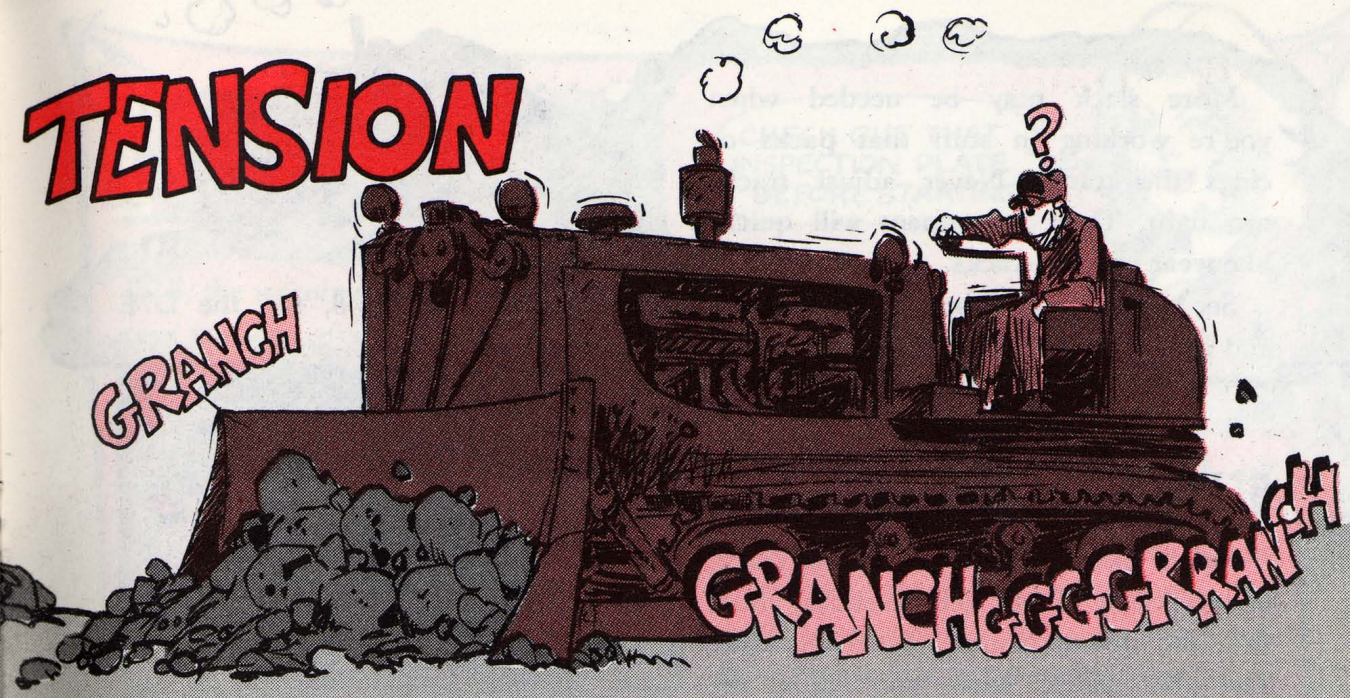


TRACK SLACK

Under normal operating conditions the D7E track should have 1 to 1½ inches of slack. On the D8 the slack should be from 1½ to 2 inches.

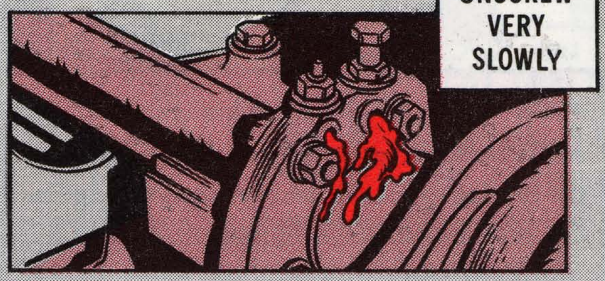
To measure track adjustment: Place a straight board on top of the track so it bridges the top rollers. At a spot midway between the 2 rollers, measure the distance from the under side of the board to the top of the track shoes.





If you open the relief valve too fast or too far—you'll go beyond its safe limits, and it'll blast off and zap you.

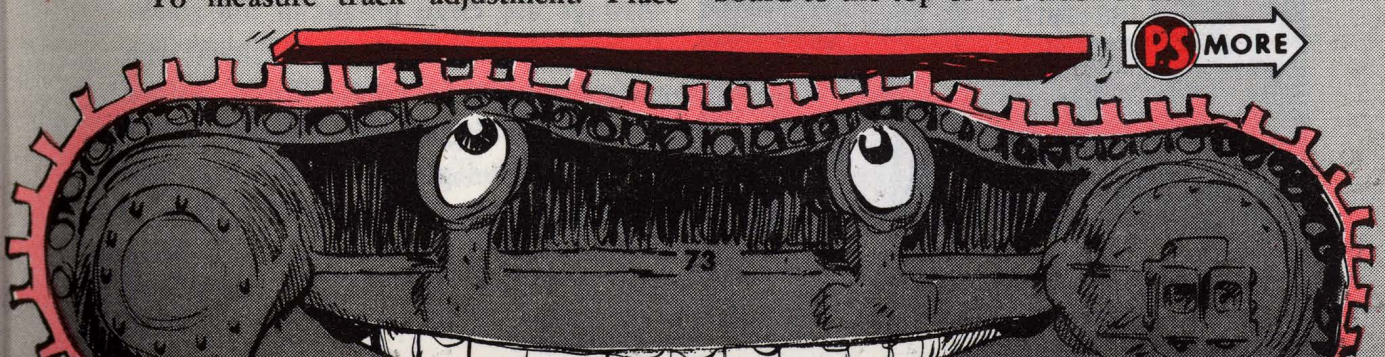
If you can toss a piece of heavy cloth or a piece of canvas over the relief valve while you're working on it, so much the better. Above all, remember—always unscrew the relief valve easy-like, and just a little at a time. That lets the grease ooze out through the vent holes, and releases the pressure gradually.



TRACK SLACK

Under normal operating conditions the D7E track should have 1 to 1½ inches of slack. On the D8 the slack should be from 1½ to 2 inches.

To measure track adjustment: Place a straight board on top of the track so it bridges the top rollers. At a spot midway between the 2 rollers, measure the distance from the under side of the board to the top of the track shoes.

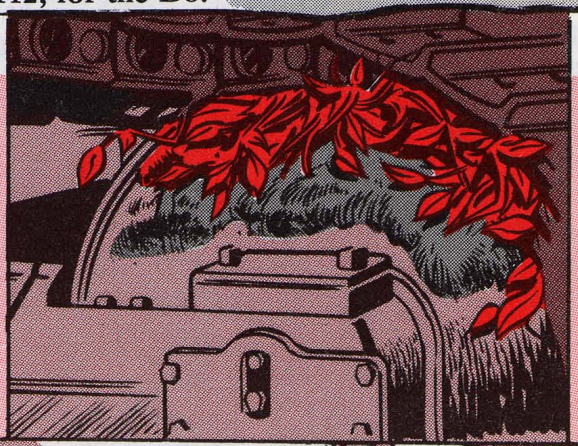


More slack may be needed when you're working in stuff that packs or clogs the tracks. Never adjust tracks too tight. Tight adjustment will quick-like wear out the tracks.

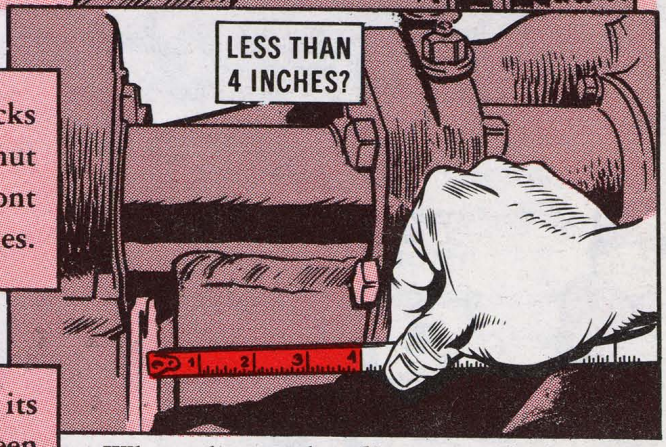
See track adjusting info in TM 5-2410-214-12 (Jun 68), page 3-8, for the D7E and in TM 5-2410-204-10 (Jun 62), page 112, for the D8.

BEFORE YOU START . . .

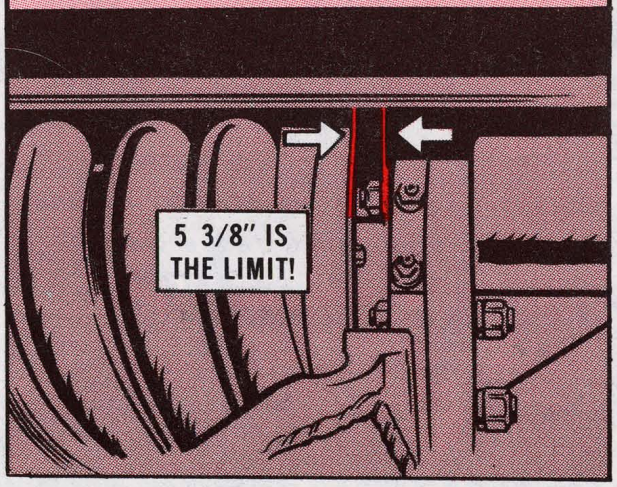
Before you start to adjust the track, always clean off all debris, sticks, mud, dirt, etc. from around the front idler. The idler moves when you adjust the track, so you don't want anything blocking it.



And, never try to adjust the tracks on the D7E if the space between the nut on the idler-rod assembly and the front idler-yoke assembly is less than 4 inches.



On the D8, the track's reached its adjustment limit when the space between the spring-pilot assembly and the cylinder is more than 5⅜ inches.

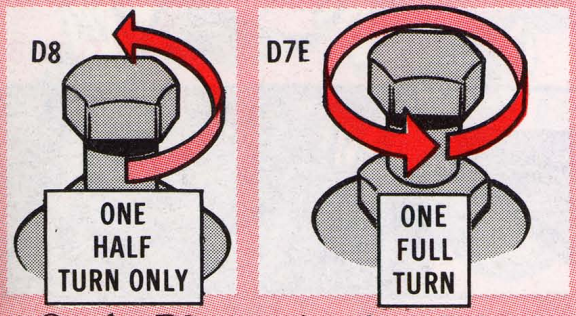


When the track adjustment limits are reached on either tractor, your Cat's in need of track assembly repair by your DSU.

Always use clean grease in the track-adjustment grease fitting. Clean the grease gun and the grease fitting, before you start to tighten the track. Dirty grease will damage the relief valve and the fitting.

TIGHT TRACK

To loosen track adjustment on your D7E, the warning on the inspection plate says you can give the relief valve 1 turn (counterclockwise).



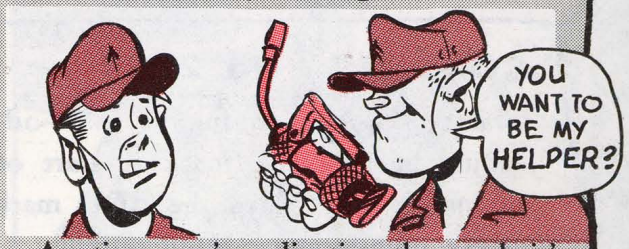
On the D8 you give the relief valve only a ½ turn (counterclockwise) at a time.

When you figure you've bled off enough grease, tighten the relief valve carefully, and drive the tractor back and forth for a short piece to equalize the track adjustment. If the track's still too tight repeat the pressure-bleeding operation as carefully as before, move the tractor again, and re-check the adjustment.

LOOSE TRACK

When the track's too loose give the track-adjusting grease fitting a couple of shots with the grease gun. Move the tractor back and forth to equalize the adjustment. If the track's still too loose give the grease fitting a couple more shots, and re-check the adjustment.

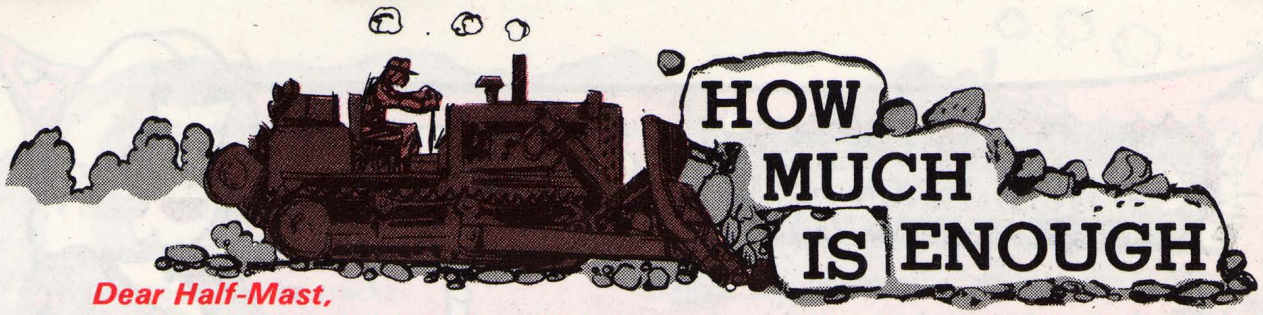
Always use the grease gun sparingly ... never just pump away. You'll just be making sticky work for yourself because you'll have to bleed the excess grease to relieve the cylinder pressure to get the track adjusted right.



Anytime you're adjusting the track it's best if you can get a buddy to work the grease gun and check the track slack, while you move the tractor to equalize the track adjustment.

DRAIN OIL COOLER BONNET

If you have to drain your D7-series tractor cooling system, make it a complete job. No matter whether you're flushing or cleaning out the sludge, sending it off for overhaul, or what, take out the bottom plug of your transmission oil cooler bonnet. Otherwise there'll still be water in that jacket that could freeze and bust in a cold climate. The cylinder block valve and radiator drain don't get it all out.



HOW MUCH IS ENOUGH

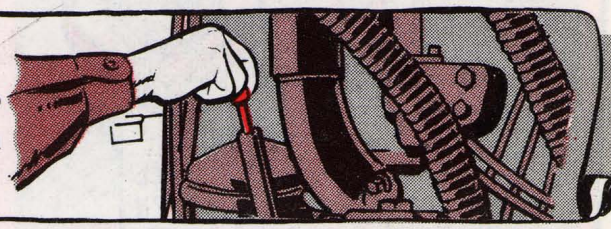
Dear Half-Mast,

TM 5-2410-214-12 (Jun 68) does not outline how the D7E tractor's engine oil level is to be checked. My question is, should the level be at the dipstick's FULL mark at all times or does it change under varying conditions?

MSG D.W.S.

Dear Sergeant D.W.S.,

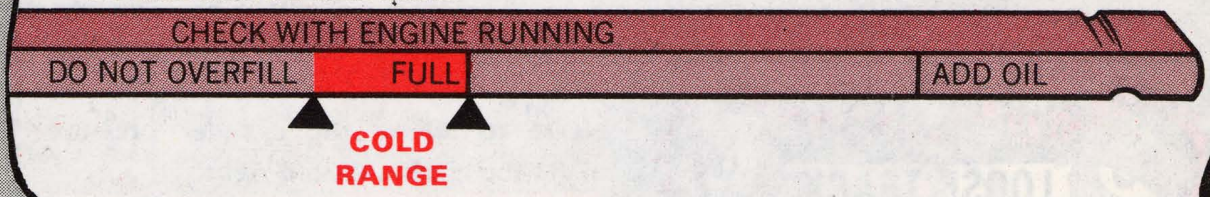
Where the engine's oil level shows up on the dipstick depends on when you make the check.



Here's where the full level should be during specific checks . . .

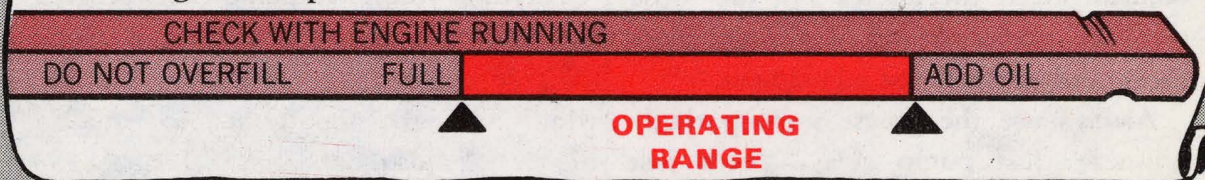
CONDITION No. 1

Tractor parked overnight—engine not running—oil cold. Level can be about 1½ inch above FULL mark.



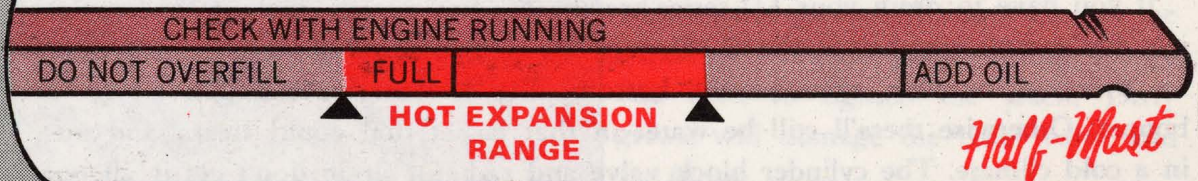
CONDITION No. 2

Tractor engine running at idle—oil at operating temperature (hot). Level should be at FULL mark at start of days operation. This gives protection against getting below the ADD mark during the work day, especially when working on a slope.



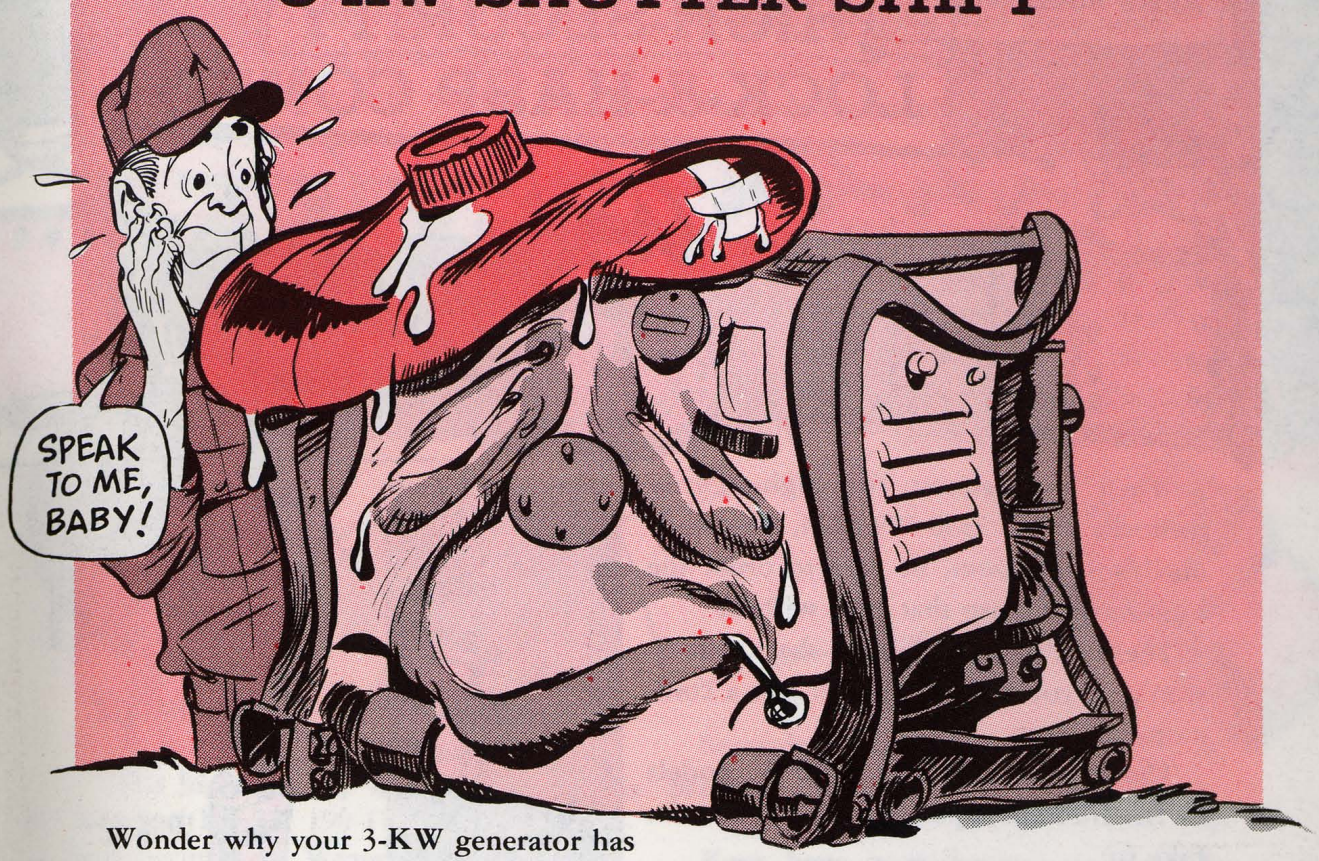
CONDITION No. 3

Tractor engine not running—oil at operating temperature (hot). Never add oil at this time. Wait until it's cold or check with engine idling.



Half-Mast

3-KW SHUTTER SHIFT



Wonder why your 3-KW generator has its bad days ... just won't perk the way you want it?

It goes into shakes, rattles and rolls and bugs out on you just when you need it most.

There's a good reason, OK. You're not using the engine's air cleaner intake shutter valve.

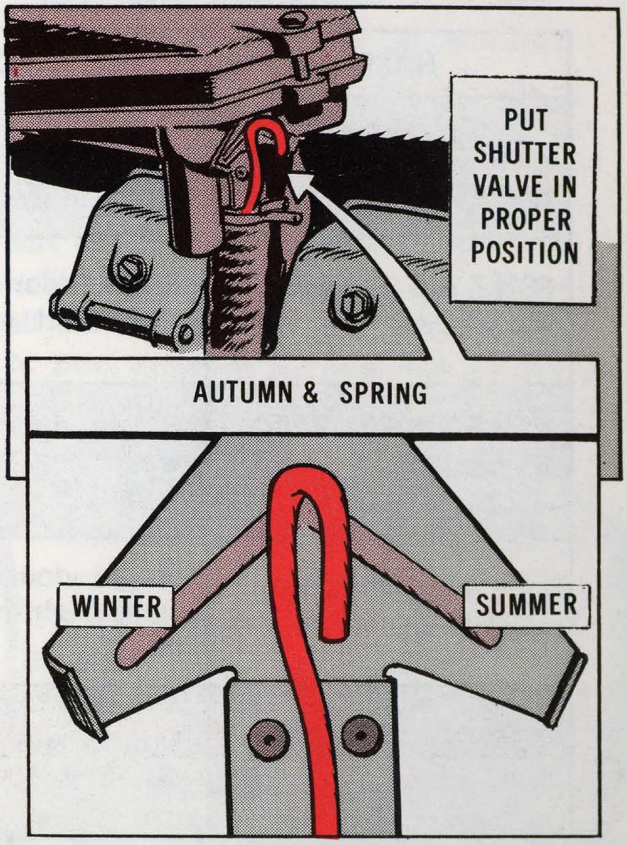
The control is simple to work.

From +25°F and below, put the shutter control into the WINTER position.

For days over +50°F, move it to the SUMMER position.

Between +25°F and +50°F, like in spring and autumn, put it in the MIDDLE position.

After a while, you'll get so good at it, you'll be flipping your switch on unseasonable days too.



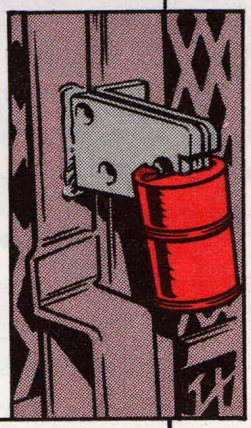
ARMS ROOM CARE ...

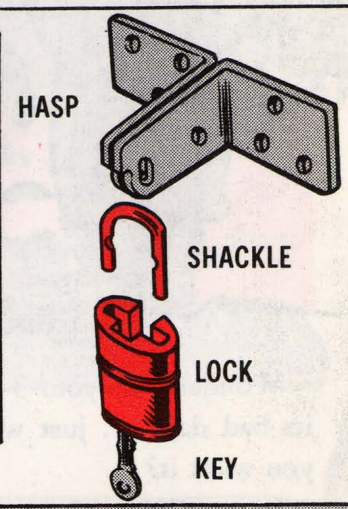
HIGH-SECURITY LOCK-&-HASP COMBO

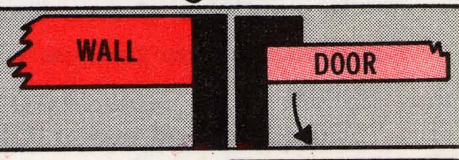
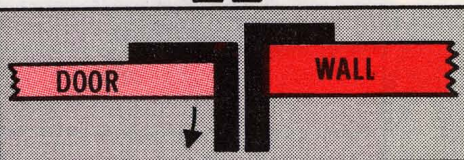
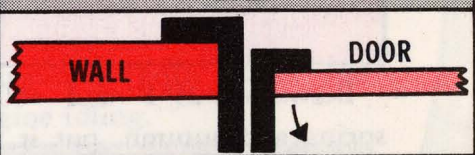
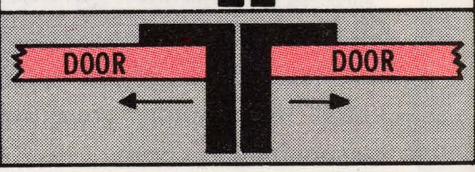
When you request the high-security padlock, FSN 5340-799-8264, for your outfit's arms room, be sure to order the high-security hasp that goes with it.

The lock has a shrouded shackle so it won't do you any good with just a common-type hasp.

The special hasp comes in 5 models to fit different type door arrangements. Like so:





HASP	FOR	
FSN 5340-178-7872, Model B&E	Single door on flat wall (right-hand installation).	
FSN 5340-178-7881, Model D&B	Single door on flat wall (left-hand installation).	
FSN 5340-178-7880, Model D&A	Single door on off-set walls (left-hand installation).	
FSN 5340-178-7873, Model F&E	Single door on off-set walls (right-hand installation).	
FSN 5340-178-7875, Model D&C	Double sliding, or open out doors.	

When welding is required, the hasp'll be installed by a post engineer welder, or some other qualified welder. So check the door with whoever will do the job, so you'll know for sure which hasp to order. And, remember, overheating during welding will destroy the hasp's tempered strength—and blow your security. So the important word for the job is—keep it cool.

The high-security lock-hasp combo is required by AR 190-11 (Aug 71), Physical Security of Weapons, Ammunition, and Explosives. It's authorized only for your arms room door.

If none of the authorized hasps will work on your arms room door, your DSU or local engineers will manufacture 'em for you. But the home-made hasp must meet the specifications in MIL-P-43607 (GL), Amendment 1 (13 Mar 69). Info on the type of metal used, and other design info, on the manufactured hasp becomes part of your unit's records on the arms room lock.

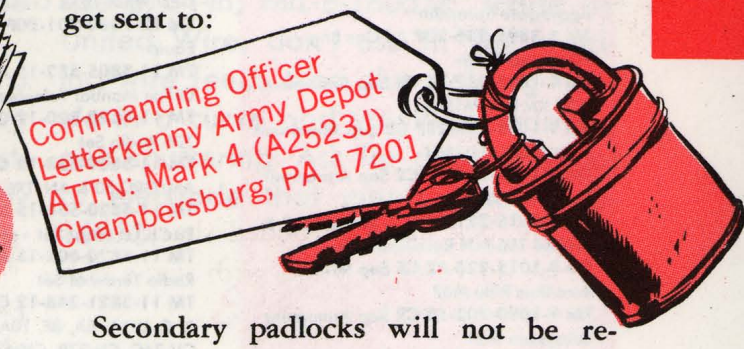
ARMS ROOM LAYOUT

The AR also spells out new layout, maintenance and accountability SOP for your arms room. It authorizes a secondary security padlock for your arms racks. FSN 5340-158-3807 gets you a padlock with a chain, for your racks. FSN 5340-158-3805 is for a padlock without a chain.

AR 190-11 and your local supply and security SOP give you the authority for requesting the locking devices and otherwise fortifying your arms room.

RECORDS AND REPAIRS

Records on supply, use, location, etc., on the arms room locks and their keys are kept by your outfit's security officer. And, that's who gets the word if locks or keys break, are damaged or lost. He'll make arrangements to have the high security padlocks returned to the depot for repairs or key replacement. The locks get sent to:



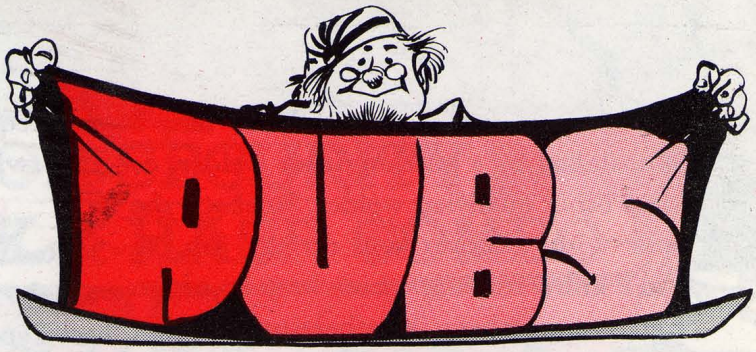
Secondary padlocks will not be repaired.

EASY DOES IT

Keys have been known to bend or break in the lock due to rough handling. Easy is the word. Some keys have their low cut at the back near the turn plate making this point easy to bend or break when handled roughly. If your key is cut this way then extra-easy is in line when unlocking. And be sure to press the key all the way in before you start to turn it. Also, dropping the lock with the key inserted may damage the guts of the lock —so hang on to it.

LUBE

Since the lock is normally used indoors it usually does not need to be lubed. But if it gets stiff, lube it with molybdenum disulfide, technical, powder form, FSN 6810-264-6715 (1-lb). The stuff is listed in SB 38-100, page 35, or use graphite, FSN 9620-233-6712. It's listed on page 32 of the SB.



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 70), and Ch 4 (Feb 71), TM's, TB's, etc.' DA Pam 310-6 (Jul 71), SC's, and SM's; DA Pam 310-7 (Apr 71), MWO's; and DA Pam 310-9 (Jul 70), COMSEC Pubs.

TECHNICAL BULLETINS

TM 5-2010-202-20P Jul 165 HP Diesel Outboard Motor
TM 5-3431-227-24P Jul Arc Inert Gas Welding Set
TM 5-3655-219-12 Jul Carbon Dioxide Conversion Unit
TM 5-3895-330-24 Jun Towed Aggregate Spreader
TM 5-3895-336-20P Jul Gas Eng Motorized Roller
TM 9-1005-257-12 C3 Sep Armament POD XM18/XM18E1
TM 9-1005-257-20P C2 Sep Armament POD XM18/XM18E1
TM 9-1005-298-12 C2 Sep Armament Subsystem XM27E1
TM 9-1015-221-20P C1 Sep M40A2 & M40A4 106-MM Recoilless Rifle
TM 9-1015-223-12 C5 Sep 90-MM Recoilless Rifle M67
TM 9-1090-202-12 C2 Sep Armament Subsystem M21
TM 9-1090-203-12 C4 Sep Armament Subsys XM28E/XM28E1
TM 9-1430-512-12/3 C9 Jul Hawk
TM 9-1430-560-24P/2 & -24P/3 Jul AN/TSQ-51
TM 9-1440-585-12 C11 Jul Chaparral
TM 9-2320-230-ESC Aug TM-230-Series 5-Ton Truck
TM 9-2320-260-ESC Jul TM-260-series 5-Ton Truck
TM 9-2330-267-14 Jun TM-267-Series 1½-Ton Trailer
TM 9-2350-201-12 C13 Aug M41 Series Tanks
TM 9-2350-210-12 C9 Aug M55 Howitzer
TM 9-2350-300-20P Jun XM163 20-MM SP AA Gun
TM 9-2920-203-34P Jul SP Guns M42/M42A1, M56, M53; Carrier M75; Howitzers M52/M52A1, M55 M44/M44A1; Recovery Veh M51, M88; Tanks M41/M41A1/M41A2/M41A3, M47, M48/M48A1/M48A2C, M103/M103A1; Tractor M8A1/M8A2; and Flame Thrower Tanks M67/M67A1
TM 9-4931-334-14/1 C1 Jul XM163 20-MM Gun
TM 9-4933-209-14 May XM16 20-MM SP AA Gun
TM 9-6920-428-20P Jul Redeye
TM 9-7004 C11 Aug M44 & M44A1 Howitzers
TM 9-7022 C20 Jul M48A2C Tank
TM 10-3930-627-12 Jul GED Forklift Truck: Mdls MHE 221 and FJF-040
TM 10-3950-206-12 Jul 10,000 Lb Cap GED Whse Truck Crane
TM 10-7360-201-20P Aug Baking Equip
TM 11-5805-582-15 Aug Central Office Manual Telephone AN/TTC-29
TM 11-5820-520-12 C1 Aug AN/GRC-106 Radio Set
TM 11-5820-538-12 C1 Aug AN/GRC-50 & AN/TRC-24 Radio Sets
TM 11-5820-556-15 Jul AN/TRC-112 Radio Terminal Set
TM 11-5820-602-15 Jul AN/TRC-121 Radio Terminal Set
TM 11-5821-248-12 C2 Sep OV-1A, B, C; U-1A, 6A, 8F, 10A; CH-21B, C, CH-34C, CH-37B, CH-47A; UH-1B, D
TM 11-5841-241-12 C3 Sep U-8D, 8F, RU-8D
TM 11-6625-1749-24P Jul AN/GPM-61/APS-94D Radar Calibrator Set
TM 55-412 C1 Aug AF & RW
TM 55-450-16 C1 Aug AH-1G
TM 55-1100-375-12-5 Aug CH-54
TM 55-1500-204-25/1 C5 Jul AF & RW
TM 55-1510-202-20 C4 Aug O-1
TM 55-1510-203-CL C1 Jul U-6
TM 55-1510-203-10 C2 Aug U-6
TM 55-1510-204-10/5 C5 Aug OV-1D
TM 55-1510-204-10/5 C6 Sep OV-1D
TM 55-1510-204-20-1 C14 Sep OV-1A, B, C
TM 55-1510-209-PMD & -209-PMI Aug U-21
TM 55-1510-209-PMP Jul U-21
TM 55-1510-209-20-1 C1 Aug U-21
TM 55-1510-209-20-2 C1 Aug U-21
TM 55-1520-202-20PMP C3 Jul CH-34
TM 55-1520-206-10 C1 Sep OH-23
TM 55-1520-206-20P Aug OH-23
TM 55-1520-209-10 C11 Aug CH-47A
TM 55-1520-209-20-1 C30 Aug CH-47A

LUBRICATION ORDERS

LO 5-3655-216-12 May Gas Gen Equip
LO 5-3810-290-12-3 Jun Wheel Mtd Crane
LO 5-3895-339-12 Jun Bitum Heaters
LO 10-3930-242-12-1 & -12-2 Jun RT Forklift Truck
LO 10-3930-243-12-1, -12-2 & 12-3 Jun 10,000 Lb Cap Dsl Eng Forklift Truck
LO 10-3930-618-12-1 Jun Gas Forklift Truck
LO 10-3930-626-12 Jun Gas Whse Tractor
LO 10-3930-627-12-1 Jun GED Forklift Truck: Mdls FJF-040 and MHE-221
LO 10-3930-627-12-2 Jun GED Forklift Truck: Mdls FJF-040 and MHE-221
LO 10-3950-203-12-1 & -12-2 Jun 10,000 Lb Cap Whse Truck Crane

MODIFICATION WORK ORDERS

9-1240-312-40/1 Sep M551 Sheridan
9-2300-257-30/2 Aug M577A1 Dsl, Lt Trkd Comd Post Carrier
9-2300-257-30/6 Aug M106A1 Mortar Carrier: Replacement of Periscope Retaining Clamps
9-2350-215-30/27 Sep M60 Tank: Instal of 5-Man, 20-CFM, Tank, Gas-Particulate Filter Unit Kit M13
9-2350-217-30/23 Aug M109 SP Howitzer
9-2350-247-30/2 Sep M548 Carrier: Replacement and Relocation of Seat-Belt Anchors
11-5810-221-45/23 Aug Mod of Commo Security Equip TSEC/KW-7
11-5821-261-40/1 Aug OH-58: Mod of Radio Set AN/ARC-116 to Prevent Erroneous Transmitter Shutdowns

MISCELLANEOUS

FT 4.2-H-2 C1 Jun M30 4.2 In Mortar
FT 105-AS-2 C5 May M108 and M102 Howitzers
SC 3830-97-CL-E01 Jul Road Sweeper Magnet
SC 8465-90-CL-P07 Jul OV-1 Cold Climate Individual Survival Kit
TB 55-1510-209-20/2 Sep U-21
TB 55-1520-217-30/6 C1 Sep CH-54B

MWO Of The MONTH

Siouxmen—fly lighted and help avoid mid-air hangups. MWO 55-1520-204-40/1 (May 67) gives you an anti-collision rotating beacon light and other night flying equipment for OH-13E, G and H models. Make sure your bird has the mod.

☆U.S. GOVERNMENT PRINTING OFFICE: 1971 - 759-031/5

New SB 700-20-1

New SB 700-20-1, to be issued quarterly, will provide your AR 711-5 reportables—starting with the December report. It supplements SB 700-20, issued semi-annually.

The new quarterly will include a summary of changes for updating your property accounts. When reportable items are flagged, the quarterly summary is all that is needed for update of property records.

Make sure you include SB 700-20-1 on your DA 12-34 as spelled out in DA Circular 310-24 (Aug 71).

TOW Item Reports

Make this update in your TM 38-750 App E. Instead of the 2 items listed under ECC CB as reportable on DA 2408-8 and DA 2408-7, you report the following 7 system components: Lchr, tubular, M220 FSN 1440-179-4152; Tng Set, XM70 FSN 6920-179-7320; Trk, Jeep (TOW), FSN 1450-176-2712; Trk, Mule (TOW) FSN 1450-176-2709; Trk (TOW), FSN 1450-878-9024; Carrier (TOW), FSN 1450-176-2697; Btry Chgr (TOW), FSN 6130-087-1528. DA 2408-8 should be submitted immediately for each of these items (except a previously reported XM70). Submit DA 2408-7 only on transfer or other change that calls for it. Word went out in DA Msg DCSLOG-MED 191633Z Aug 71.

Welding Electrode

Check your welding electrode, FSN 3439-775-6476, before you use it. If you have a 1-lb spool, Alloy 5356, size 3/64-in, MIL-E-16053K, made by United Wire, don't use it. The welding wire feeds from the welding nozzle in a curve and you'll get burning and sputtering. Ask for another spool of electrode that meets spec MIL-E-16053.

EIR Shift

For your DA 2407 EIR's, mark this change to Section II of Appendix B in TM 38-750. Effective immediately send all EIR's for supply classes 3110 thru 3130 and 5305 thru 5365 to: Director, USA General Materiel and Parts Ctr, New Cumberland Army Depot, New Cumberland, PA 17070. Word went out in DA Msg DCSLOG-MED R51831Z Aug 71.

5-Tonner

Eight little words got left out of the TM on the M809-series 5-ton trucks—and it does make a ding-dang of a lot of difference. Para 2-12, a(4), page 2-33 TM 9-2320-260-10 should say "Place battery switch in the OFF position **only after the engine has completely stopped rotating**." Otherwise that alternator up front can burn out bulbs and fuses and diodes and stuff all around.

Would You Stake Your Life right now on the Condition of Your Equipment?

DID YOU DUMP THESE $

TURN IN UNNEEDED ITEMS TO YOUR DSU

IN YOUR SALVAGE YARD?